COURS II 1842 & 43

Notes on the Lectures of
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Lecture 1st. November 8th 1842. — by John Cox. —

Effects of Operations, Injuries, and Wounds on the Constitution.

The only phenomena noticed by surgeons upon the receipt of an injury, as a wound, before the appearance of Sir Astley Cooper's Work on Surgery, were inflamation and fever. These, following all wounds of any importance, could not escape their notice; and being always found, their remedies were directed to them. Indeed so fearful were they of inflamation and fever, that, before performing any surgical Operation, their patients were uniformly put upon a light and vegitable diet, gently purged, and allowed only Cold drinks, for at least 3 days, and sometimes for 2 weeks. I remember being called in to see the wife of a sea Captain,

a pale and sickly woman, in consultation with Dr. Physick. I was about to make an artificial pupil, when the doctor inquired if she had been bled or had taken salts; upon being answered in the negative, he at once objected to the operation, and I was obliged to postpone it. All this was done from dread of inflamation. But it is not inflamation alone in these cases to which we must direct our attention; neither is it fever; for most persons die after the receipt of an injury without fever.

Before going further I will speak of the <u>character of constitution</u>, which differs in different individuals. A person in good health, who takes daily active exercise, and who is accustomed to hard labour, will receive an injury from which he will recover, which injury in a weak and debilitated constitution would have proved fatal. So in females; there are several cases on record, of their dying from the prick of a needle. There are <u>temperaments</u> too; as, for instance, the sanguineous, which is attended with a predominance in the vascular, and the nervous, which is attended with a predominance in the ner-

vous system. To these are added others, as the bilious and phlegmatic. These temperaments or idiosyncracyes require differences in treatment. Opium has bad effects upon some constitutions. I have known cases where the most distressing effects have arisen from the exibition of a moderate dose. Some persons cannot bear bleeding. I know a family in which there are nine children, in none of which, have I ever been able to take more than 2 or 3 ounces of blood, even where the most violent inflamation excisted. In intemperate persons our treatment must be different. In these persons the wound is very apt to be followed by erysipelas. In persons who have been accustomed to high living we must be on our guard. We must confine them and guard against plethora by depletion. In persons accustomed to study, who take little exercise, and live in confined apartments, we need not guard against plethora. These are the leading varieties. Having made these remarks I will ~~now~~ now proceed to the consideration of

what I term a constitutional shock, a sudden agita- or tremor; as may be observed when a patient falls upon the head or face. There is little sensibility of the nervous system, loss of motion, cold skin, and sometimes a feeble pulse and this without any loss of blood. In blows on the stomach, lacer- ation of nerves, fractures, and blows on joints, we frequently see an abolition of all the functions of the animal economy. We are led sometimes to think the brain has suffered. In injuries of this organ they recover soon, in other cases not so soon generally. This kind of shock I call the overwhelming shock. From this primary impression of the injury, you must not think they cannot recover. We must excite the respira- tion and action of the heart. First lower the head and shoulders, as in all cases of this kind, admit plenty of fresh air, remove all lig- atures from about the throat. Above all keep the head and shoulders low, for if he be kept el- evated, the small amount of blood in the brain will be insufficient to carry on the the functions.

I generally bring the head over the edge of the bed, allow the legs to be rubbed & give ammonia or wine, if deglutition can be performed. The patient then soon begins to breath and sigh. As his system reacts I apply cooling applications to prevent too great action. If it reacts slowly there will be a coagulum formed in the vessels which will prevent hemorrhage. In cases of very great prostration I give stimuli by means of the stomach tube, and in extreme cases I use injections. The best are brandy and gruel. I give 1oz. of brandy with 2oz. of gruel, thrown up the rectum and repeat in an hour after. These with frictions and low head will reanimate the patient. Dry warm friction with flannel is the best. If these do not succeed the case will be fatal. If the system does react in 20 minutes or half an hour there is danger of excitement. Then apply cool applications. If the pulse be full and face flushed deplete gently, open the bowels. If the patient have taken a hearty meal, or if he has eaten any thing more

than a little tea and bread, the stomach not being in a condition to digest, and if it remain being likely to create irritation, we must give a little warm water to promote vomiting. If this does not not succeed we must give Specac: 10 gr with warm chamomile tea, or a teaspoonful of common salt with oil.

There is another shock to which I call your attention. This is a shock through part of the system, a tremour, colvulsive motion, or paralysis of the part. If it subsides there is no harm done. If it continue give Tr. Camphor, Sul: Morphia or Hoffman's Anodyne.

There is another shock, the insidious shock which is hard to detect. The patient complains of nothing. He feels no pain, has a good pulse, and must be told that he is injured. Take hold of him and he will tell you to let him alone. I was called to a man, who in jumping from the cars fell upon the rail, the wheels passing over both thighs, One arm near the shoulder and the other above the wrist, injuring the soft

parts about the head and pelvis. I arrived a short time after he had received the injury. He had no pain, (no hemorrhage, delirium, calm) no sickness, a good pulse and not aware that he was at all injured. He died about 3 hours after. These cases generally remain a day or two with a clean tongue, good secretions, eat well and sleep well, when they are affected with tremors and spasms, the wound puts on an unhealthy appearance, there flows from it an ichorous discharge, the pulse becomes small and weak and the patient dies. In these cases there is a peculiar expression of countenance. About the lower part, as the lips, there is a smile, and about the upper part, as the forehead, there is an expression of surprise and alarm. The forehead is drawn into wrinkles. When I see this, with a weak pulse, and bad wound, I always give a fatal prognosis. I was called about 3 miles into the country to see a boy who had received a severe gunshot wound, the contents of the barrel entering at the back part and lodging in the leg. A dressing had been applied to the leg which was

cold and insensible. There had been no hemorrhage, the pulse and skin were good. But, upon seeing this expression of Countenance I gave an unfavourable prognosis. I wanted to perform amputation the following morning, this being 4 O'clock in the afternoon, if the pulse continued good. On the afternoon of the next day he died. I was called to see a lady who had received a wound, a trifling puncture from a needle in the thumb. I arrived half an hour before the family physician. Upon first seeing her I observed this expression of Countenance. I entered the room during that half hour several times, and she always expressed surprise and astonishment. I told them she would die. In three days, I heard she was a corpse.

Lecture 2nd. November 9th. 1842

Subject continued.

Following operations, wounds or injuries, there must not always be a depression of the nervous system, for, in the majority of cases, we have no evidence

of it. But in many cases we have this state of thing. Sometimes following an operation, or injury, we have a state of constitutional debility, or irritability. There is a cold chilly sensation, something like an intermittent. The pulse is tense, remittent, or tumefied, there is a recession of the fluids from the surface of the body, a sense of oppression about the precordia, depending upon a disordered state of the nervous system. To relieve this I wrap the patient up, and give opium, lavender, paregoric or brandy toddy, with a ligature to the extremities. I place them around the arm, or thigh. Sometimes all the limbs, first on one side, and then the other, and in that way unload the vessels internally, and load the capillaries of the extremities. But, more commonly, we have pain and spasms, called by the vulgar convulsions. Sometimes these occur at a shorter or longer period after an injury, always occurring when reaction takes place. But it is different in different cases. I have seen bad cases without it. I have seen cases where the

patient, 6 hours after the injury, would cry out with pain and spasm. Sometimes we have spasm with pain, sometimes spasm without pain. When you see this, look for something indigestible. I have often felt sorry I had not paid attention to this. Look at the system. If it occurs before reaction, when the skin is cool, and there is no arterial excitement, the proper remedy is the Sul. Morphia ⅙ gr every half hour or hour with frictions to the extremities. This is directed, not for pain and spasm, but for the system. If the cheeks are hot and flushed, and the pulse full, these are improper. Then draw blood moderately to lower the pulse and cool the skin, elevate the head, cool the apartment, give the effervescent draught, use evaporating lotions over the part. I give antimony for pain and spasm with arterial action. I depend upon it in all cases, with elevation of the shoulders and if necessary moderate bleeding. I put 2 grains in ½ pint water and give a teaspoonful every half hour or hour, and, if there be any indigestible matter on the stomach, I carry it to vomiting. At the same time I

give cool drinks. If it continue I give Antimony 1/8 gr. Sul. Morphia 1/8 or 1/4 gr. every hour until I do overcome it. Sometimes, when the pain and spasms are violent it is necessary ~~it it necessary~~ to give larger doses, and then I conjoin them with Calomel. It is astonishing what doses of opium some patients will bear. I have given 2 grains every hour and at the same time been obliged to throw it up the rectum.

Besides these symptoms, we sometimes have vomiting. Sometimes there is convulsive vomiting; sometimes it is the mere action of the stomach alone. I have know it wear out the force of the system. If it occur after a full meal give an emetic. Ipecac. will be the best. Aid it by tickling the throat with the feathered extremity of a quill. This is important as I have known patients throw off small quantities for a whole day, and yet, after giving an emetic they will throw off a load of food. If the stomach be not loaded do not give an emetic. Use external irritation, as bladders of hot water. I find the use of a tumbler as a dry cup the best. By

these means we divert the nervous irritation. If there be febrile excitement use evaporating lotions, sarifications and cups. It is not often irritable in the hot state, and when so, the case is a bad one. In these cases I prefer cups to the spine with synapisms. Look at what the patient craves. If ice or cold water give it to him in small quantities. If he be cold give cloves, burnt brandy, or the cardamom in small doses. Small doses often repeated are better than large ones. The next symptom is delirium - traumatic delirium. Of this there are a great many varieties. Sometimes it occurs several days after and sometimes where there has been no shock. I have had it occur upon the removal of the Parotid Gland, and continue 3 days. In another case I had it come on 11 days after the operation. In these cases I overcame it with opium, antimony and little blue pill. It is mostly the result of depression of the energies of life. Then again during high febrile excitement it occurs. There is no difficulty to distinguish it in these different cases. When it occurs from loss

of blood I prefer morphia with the head and shoulders low. If after excitement, delirium occur, elevate the head, apply a bladder half full of cold water to it, give an injection and follow by laxatives and if necessary use blood letting. Another is delirium of the irritable kind, following compound fractures, blows &c in which the pulse is rapid and frequent, skin hot and flushed, eyes bright. It is a state of constitutional irritation of a distressing and deceiving kind, as symptoms of irritation invariably prevail. That which results from loss of blood never requires bleeding, but evaporating lotions, ablution, and ammonia internally. I have never seen good from castor and musk. Of ammonia give 5 grains every half hour or hour with camphor or morphia, or with gruel and a little brandy. Give it in solution. Take 6oz Water with 20 grains and give a tablespoonful every half hour. If with morphia the patient falls asleep, then give the ammonia alone. It never acts upon the head. If the tongue be furred and the secretions affected give Calomel 5 grs every 3

or 4 hours, but not with the ammonia, as it decomposes it. The next is irregular action of the heart, sometimes intermission. This occurs generally 4 or 5 days after the injury and by surgeons generally has been considered unfavourable, but they generally get well. There is no one symptom unfavourable. This is frequently seen in old persons, and in others where the stomach and bowels are deranged. I use anodynes, narcotics and counter irritation. Another is a disordered state of the respiration. There is sighing, short, anxious, and irregular breathing, with oppression. This requires bleeding, leeching or cups. When it occurs with a cold skin and weak pulse we must stimulate. I always count the respirations as physicians do the pulse. It ought to be 22. If it be found 40 with the above symptoms watch it.

Lecture 3rd, November 10th, 1842.

Subject Continued.

Another is suppression of urine, which is striking and important. This was generally considered by

European surgeons fatal. But this I am convinced is a mistake. It is unfavorable when accompanied by a great deal of constitutional disturbance. When existing by itself it can be relieved by mucilaginous diuretics. 2 or 3 grains of Calomel, 10 grs of Nitrate of Potash and 2 of Camphor, with drinks of gum arabic water or flaxseed tea. If the skin be cool, warm emollient fomentations, flannels dipped in warm water and applied to the extremities, or to the whole body I have found the best treatment. If the skin be hot I use ablutions over the surface to relieve the excitement. Some surgeons give Calomel alone; but a combination is the best. I have sometimes been able by these means to restore the secretion in two or three days. Retention of urine. This may occur from over distention of the bladder, We frequently see it in cases of mortification and Typhus. It may occur in injuries of the spine and head. But it does not occur so often as suppression. If there be retention we will have swelling over the regio pubis.

We may feel it by passing the finger into the rectum and tapping gently above the pubis. In this case we must draw of the water by the Catheter, and attend to it until there be sufficient power to pass it. This, however does not generally occur only in diseases of the brain or spinal marrow. Another is loss of tone in the muscular coat of the bowels, produced by disease in the sympathetic nerves. There is flatulency and a tympanetic distention of the abdomen. Some have considered it an effusion of flatus in the cavity of the abdomen. But this is not the case. We only have that in cases of ulceration, or wounds of the intestines. It consists in a paralysis of the muscular coat of the bowels. By not attending to the contents they produce this distention, and deteriorate the secretions. There is a slight, watery and very offensive discharge. Drastic purgatives always exasperate this disease, and I am careful to avoid them. If cathartic remedies are used I employ small doses of mercurials and laxatives. I give 1/8 gr of Calomel with Dovers

Calomel with Dovers Powder, or Opium with 1/2 gr Ipecac. every hour. I also allow Tapioca. Sometimes I give the turpentine emulsion, with gum Arabic or loaf sugar, 20 drops every 2 hours. In urgent cases I use synapisms or blisters followed by poultices. In extreme cases I pass a stomach tube as high as the sygmoid flexure of the colon and in this way draw of prodigious quantities of air. This you will always find when severe wounds are running into mortification, and you cannot check the progress of it unless you relieve this. Of course if the pulse fail give the turpentine with brandy. In other cases the functions of the skin become affected. There are two opposite states of this. In one there is a livid cold and flacid skin. In severe injuries which we know will prove fatal this arrises. We can pull the skin up and it will stay in that way for several minutes. Nothing will do here but stimulants. In the other case there is an excess of action, with a cold perspiration. It indicates a distressing shock to the nervous

system. To the stimulating plan we must add astringent applications. Sponge the surface with brandy saturated with alum and rub until quite dry. I might enumerate a great many more symptoms that arise after the receipt of an injury before inflamation comes on, but I consider it unnecessary. ~~When inflamation does arise we have a full strong and bounding pulse, great heat of the skin~~ Inflamation finally does occur after a recurrence of high excitement. Sometimes after a temporary or fluctuating excitement. When in plethora it may be subdued by moderate blood letting. Nature designs to set up fever and inflamation. In different cases it arises in different ways. As regards the period in no case have I known it arise before a day, except in a case of inflamation of the peritoneum, in which I have known it arise in Eight hours and a half. Generally it does not arise before two or three days. I see this in my operations on the eye. The vascular injection that is observed is another things I have known cases of inju-

ries of the brain where inflamation did not arise until 3 weeks after. It is very various. It never arises immediately only when the patient is in an inflamatory state. We see this in operations upon patients who have rheumatism or inflamation in the chest at the time. Fever may be considered a shadow of a local disease. When it is set up in healthy persons it is said to be sympathetic.
When inflamation exists we have a full, strong and bounding pulse, costive bowels, tongue dry and covered with a whitish fur, the secretion of urine is checked, pains in the extremities or head. Sometimes it comes on with chills and rigours, sometimes not. Sometimes it comes on exactly like an intermittent, particularly in patients from miasmatic districts. We are not usually to deplete actively. Ablations of cold water, with cold drinks, and a saline cathartic generally answer. In other cases give antimony 1gr in the course of the day with lemonade. At the same time attend to the wound. In other cases we have ~~irritation for fever~~ Here the limb swells,

there is heat and smarting, we observe lines along the course of the lymphatics, effusion in the cellular texture, the pulse is not so full and bounding, it runs more frequent 120 – 140 and sometimes 150 a minute, it is small corded and irritable, the tongue becomes hard there is a brown stripe in the centre of it, sordes, drying of the secretions, the head is tender and sore, there is watchfulness, and the respiration is rapid and irregular. In the treatment of irritable fever we must give no stimulants or no food. After it has worn out the system then quinine bark or opium may be proper. The treatment to resort to is prodigious depletion. These cases require more than cases of common inflammatory fever. In old and worn out constitutions, when they have received a wound on the head, followed by what is called traumatic erysipelas, they have bourn enormous depletions In these cases it acts like a tonic by lowering the pulse and relieving the excitement. I have taken from patients labouring under phthisis and having an inflamatory affection, ten ounces of blood on one

day, and in the same patient, one once the day before would have proved fatal. It is in this way that blisters give strength in Typhus.

Lecture 10th November 11th 1842.

We pay no regard to the frequency of the pulse in these cases. I have bled largely where the pulse has been 120 – 140 or even 160 with the happiest effects. We must observe the kind of pulse. If it be hard, tense and unyeilding under pressure we may bleed. In feeling the pulse I apply the whole of the fingers over the artery first compressing it lightly and then carrying it gradually to a complete stoppage of the blood. I generally press hard with one finger above and feel with the others if the flow of blood is intercepted. We meet with cases where the pulse is small hard and thready in which cases inexperienced practitioners object to bleeding. If we press that pulse with one finger and apply the other below we will find the flow of blood little impeded. It seems almost impossible to stop it.

This pulse may be compared to the string of a violin or to one of the wires of a piano. If we open the vein, there may be only a trickling of blood from the opening. As more is lost the flow is greater; the pulse rises from the loss: it becomes full and soft. It may be compared to a horse or a ship overloaded. As we remove the load from the ship she rises. So with the pulse. The blood seems to be contentrated upon internal organs impeding their functions. As we remove it the respirations become fuller and stronger; the blood is sent with more force to the extremities the pulse becoming full. In cases of pneumonia we observe this pulse. If the pulse rises from the loss of blood, we are not to leave off when it becomes full; We must continue it until it sensibly falls, before we stop it.

Lecture 5th. November 14th 1842.

Subject Continued

I have spoken of irritation. There are diversity of

forms accompanied by local inflamation. There is a rapid pulse, dry tongue, tremors of parts of the body, delirium deranged action of the heart and arteries and of all the secretory organs. These cases require but moderate depletion. They must be distinguished, and I am anxious to impress it upon you, from those in which the pulse is small, hard, corded. This irritability arises in intemperate habits, in those who have lived in confined apartments. It requires but moderate depletion, then leeches and cups with proper laxatives and mild diaphoretics. It is best after opening the bowels by a mild mercurial, to give 1/4 gr. of Antimony with 1/8 gr of Morphia every few hours. When you have subdued the heat and excitement give diaphoretics. I prefer stimulating diaphoretics. Give of Spts: Mindereri ℥ij with 1 gr. of Morphia to 8 oz of Water, a tablespoonful every few hours.

These cases are apt to assume typhoid character, caused by permitting this state of excitement to continue, the system wearing itself out. If all the symptoms of depression arise, give such

stimuli as Ammonia or bark. The best to begin with is lime whey with ammonia. An aromatic decoction with bark if mortification take place. Give the aromatic decoction with a teaspoonful of Huxham's Tr. Barks every 2 hours. Give broths. We can give with advantage Sul: Quinine.

Consideration of the local disease. Wounds of every kind are liable to great diversity of morbid action, produced by climate, treatment and the state of the constitution. There have been many classifications; as phlegmonous when it is attended with increased temperature. The best name is healthy inflamation, called so by Hunter. His work should be read by all of you for his principles are true and never will change. The first is made by which wounds unite with the least disturbance, that is where the edges are brought together. Hunter's idea is that there is a small quantity of blood remaining in wounds which coagulates and glues together the sides, just as cabinet makers fasten the outside piece to that beneath. Vessels shoot into it, and inascu-

late with each other, reorganise and reanimate it; and thus union is effected. There is no pain, no inflammation and no redness. The blood becomes the bond of union. The only danger is in leaving too much in the wound. Hunter recommends but a small quantity, merely sufficient to agglutinate the parts.

If the wound be deep, and extensive laying open vessels which bleed after the wound is closed, and for the prevention of which sponges and other substances have been applied, where the blood flows in continually, where the part has been kept in motion, where dressings have been badly applied; there produce itching or smarting, there is swelling and increase of temperature; and we shall have inflammations neither of the symptoms are very intense still we have inflamation in a low degree. From it excitement arises; there is effusion from the cut surfaces of the vessels of coagulating lymph; which spontaneously coagulates. The albumen does not coagulate by powers inherent in itself. We use the participle because the power of coagulation is inherent in the lymph. Just as the mus-

cles contract after death, so the coagulating lymph squeezes out the serum by its contraction after bleeding. No doubt the the red globules and serum are absorbed or run out from the wound. There is inflamation of a low kind; the vessels enlarge; there is redness of the part there is an effusion of lymph in the cavity into which vessels enter; it heals, contracts and is resolved. This is of great advantage in wounds of the thorax and abdomen in preventing air blood and fecal contents from getting into the open cells of the surrounding cellular texture. In infamation of the abdomen this inflamation is set up uniting the parts in a very few hours. Vessels absorb lymph, as may be seen in the eye after operations for artificial pupil.

In union by the <u>first intention</u> or <u>adhaesive inflamation</u> the symptoms excited are always mild.

By irritating the part by motion by foreign bodies by ligatures by any thing exciting the inflamation is carried to a higher pitch.

The <u>suppurating state</u> is attended with rigors and chills there is shuddering pulsation in the

wound and neighboring parts, the arteries are enlarged in this state with decided symptoms of fever. There is a secretion, not excretion of a viscid thick globules floating in sweet mucus. This is pus differing from the elements of the blood. The globules differ from the globules of the blood, and according to Physiologists any change is a secretion. The vessels take on a secretory function and by this relieve themselves. If allowed exist the secretion relieves the inflamation and is followed by granulation. If it take place in a close cavity as from a bruise we will have absorption or ulceration. Physiologysts think this takes place as much by the veins as lymphatics. The small vessels when, when pus is confined take on a new action eating the solids. This is not done in every direction but towards the surface. and if near the trachea or bronchia in these always towards a cavity having an external communication. The cuticle is never absorbed. Ulceration is attended with a gnawing pain if if the patient could feel the removal of the particles. It is always best as

soon as it is felt to open the abscess. Granulations which are small particles like grains never begin to form until the pus is discharged. The process by which this is effected the French call Vegitation or growth from the cellular tissue. Hunter an exsalation of lymph. The vessels not secreting pus throw out this grain of lymph and shoot into it. In proof of this we see wounds after disturbance or cold covered with lymph not organized. Attempt to pull it up and we find it adheres. This contracts and draws the sides of the wound together. A thin stratum like pastebeard is only required, it not being necessary the cavity should be filled. This is cicatrised over by the vessels of the skin. This cicatrix is liable to be destroyed ever afterwards from weakness or other causes. This is what Hunter calls healthy inflamation because its object is the restoration of parts.

Lecture 6th. November 15th 1842.

Subject continued.

The lining membrane of an abscess always pass

takes of the character of a serous membrane. After the cavity is opened it is converted into a mucous membrane. Granulations never are formed before the abscess is opened. Bones do not heal by granulation in case of fracture, as stated by many European surgeons. The cases in which they observed it, were those of compound fracture. When opened it becomes a mucous membrane like that lining the Antrum Highmorianum, as I have frequently seen in abscesses opening into the cavity of the femur or humerus. This inflamation is considered healthy its object being the healing or restoration of the part. Unhealthy inflamation. The simplest form of this is erythema. It may be produced by turpentine or mustard applied to the surface, by the sting of a wasp or thorn. This is generally mild. It may be removed by applying a solution of lead to the part, and paying attention to the bowels.

There is a modification of this when it gets over the eye-lids, scrotum or prepuce. It is then attended with an infiltration of serum into the

cellular texture of the part. This is the simplest kind of unhealthy inflamation attended with Oedema. In this the inflamatory action relieves itself by effusion. It deserves but little attention.

I now pass to a decided form of morbid inflamation, Erysipelas. This is analagous to erythema, extending to surrounding part, but differing in severity. There is a simple form of this attended with elevation of the Cuticle and vesications. This is mostly met with by the physician, not the surgeon, in persons of intemperate habits, in those who live in Confined apartments, or in persons of irritable habits, after a wound. This does not extend beyond the skin or cutis vera. It requires only the use of saline Cathartics seidlitz powders and low diet.

When this is extensive, the whole substance of the skin and cellular texture being involved, it is called phlegmonous Erysipelas. This may occur after wounds particularly of the scalp. A person receiving a wound and going into a hospital, which is badly ventilated, and where the

air is impure, may have this form of erysipelas. They may have this morbid inflamation marked by the progressive character. There is no adhesive inflamation which is a barrier to the progress of it. The inflamation is liable to extend to a greater or less extent. When it observes a puffy state if we ventilate the room and remove all irritating dressings the tumefaction will disappear. There is nothing required but cleanliness, fresh air, laxatives and a well regulated diet.

When the cellular texture of the whole head be distended; when the patient cannot open his eyelids or lips; when the nostrils are nearly closed; when the secretions are arrested; we then have one of most intense constitutional disturbances. If tonics are resorted to in this case death will be the result. In the worst of patients for the first few days we will find the pulse hard and corded. In these cases I frequently bleed 3 or 4 times a day. This develops the excitement, which I am frequently com-

pelled to reduce by bleeding. I follow the bleeding by leeches and cups; by mercurial cathartics and antimony pushed to vomiting. 3 gr of Calomel ¼ of Tartrate of Antimony every hour. To there I sometimes add morphia. If this dont do I make incissions through the puffy part 1 in. in length. I have made these on the head to expose the pericranium. Make these incisions one or 2 in. apart. This keeping up the mercurial and diaphoretic treatment. As regards washes, lead water, 5 grains to the ounce with 1 gr of morphia, keeping the part moist, relieves the irritation and smarting and by evaporation inflamation. Any mild application will do that agrees with the Constitution. Only when the system is worn out, the pulse weak, soft, feeble and yielding, the extremities cold and respiration feeble, must we stimulate. Then give the Volatile alkali in 5 gr doses or wine whey. We may give brandy with nutritious articles of food. When there is no drying of the secretions we may give Quinine. I sometimes give broths porter or even

animal food. I have seen cases, with something like an intermittent type. In these after depletion I resort to the Quinine, at the same time using evaporating lotions. This form never will be seen if the first form be treated right. By stimulating applications as terpentine, the solution of corrosive sublimate, the inflamation traverses the cellular tissue and sloughing. Large collections of a sanious fluid are mixed with a thin watery purulent matter. In it we find strings, which are of considerable length. Such application destroy the skin particularly where blisters are employed. Blisters come in useful in some cases but must not be applied over the part. They are useful when it is rapidly extending applied above the part. Free scarifications I make 1/2 to 1 in. in length.

Lecture 7th November 16th 1842

Another form of morbid is the furunculus or boil. This is situated in the cutis vera. There is a high degree of inflamation with sloughing and the formation of what is commonly

called a core. The inflamation around is of the adherine kind. An abscess is formed; there is detachment of a slough; pus is secreted; there is distention of the part; the nerves are irritated by the inflamation. The specific character of this is the formation of a core. The skin finally gives way and we can see this core. If we pull at it we give pain and produce hemorrhage. The best application is a poultice, which may be kept wet with lead water. When the core begins to form, the best plan is to run the lancet into it making an incision ½ to 1 inch in leghth. continuing the poultice. The moment this is done the pain ceases. By irritating them we may have a succession of them. I have seen 30 or 40. In these cases we must give gentle laxatives, blue pill, and a mild diet.

The next form of morbid inflamation is seen in <u>Anthrax</u>. This is similar to Furunculus but more painful. They are generally found on the neck or shoulders sometimes on the

nates but rarely on the extremities. This never points but is always flat and sometimes we find a depression in the centre. There is a great deal of surrounding erysipelatous inflamation, instead of phlegmon. In this we never have the adhesive inflamation. If it be on the neck we have the inflamation extending to the shoulders or further. There is a tendency to the formation of a core. The European Surgeons recommend barks and wine, anticipating depression. In this Country Surgeons generally have adopted this plan.

The breathing is laborious and oppressed, the secretion are checked, the pulse is small depressed and cordeal. Bleeding was always required in the Cases that I have met with. Topically they required leeching and mild poultices. Slippery elm makes one of the best poultices. They may be kept wet with lead water. To these Add calomel, Tartrate of Antimony. Sometime Opium to relieve the irritation. When the system gives way it then becomes necessary to stimulate. The way to treat the part is by long or cru-

cial incisions. By these we expose the core to which we should apply nitric acid or potash. After the slough is detached, granulations shoot up and the part heals.

The next form of morbid inflamation is what is called gangrenous inflamation. This arrises in irritable constitutions and is generally met with in the extremities. My friends in the north have related many cases which come under their hands. These persons live upon salted and badly cured meat. If they stump a toe against a stone or stump it is followed by an inflamation which extends rapidly up the leg. The system is unable to keep up this excitement, and wear itself out. the part becoming gangrenous. There is a stripe extending up the limb; the part is distended with a gas; it has a dark brown appearance. In these cases we give emetics. We put the patient on the floor and throw 3 or 4 buckets of cold water over him afterwards using stimuli, with evaporating lotions to the part. During the excitement we may apply a bandage from the toes to the groin.

Whitlows frequently terminate in mortification. The inflammation extends up the hand and down the bone. The periosteum becomes inflamed and detached from the bone. In these cases we must make free and deep incisions afterwards applying poultices. We may also use a splint to prevent the stimulus of motion and keep the part elevated. Or, we may keep the patient on his back. We must use active blood letting, free evacuations & afterwards Calomel.

We may have morbid inflammation in any part of the body in unhealthy and irritable constitutions. Every inflammation may become morbid by neglect of proper attention of proper application to the part. The excitement in these cases wears out the system. Mortification I have always observed to be complicated with an abscess. I have never seen it occur where there was no matter. After amputation when the part becomes gangrenous we always find a cavity in which matter is lodged. There is a collection of matter always before mortification.

Lecture 8th November 17th 1842.

Mortification continued. Mortification always follows inflamation, except where the ligature has cut off the supply of blood to a part. Tumours mortify when a ligature is passed round their base cutting off the supply of blood and nervous influence from the part. The gangrene of old people, senile gangrene, which is supposed to arise from obstruction in the circulation, from ossification of the valves of the heart, or arteries of the part, which is first observed in the toe, I have never seen arise only after inflamation. The power of the part is exausted by the excitement which it is unable to keep up. These cases are benefited by putting the part to the fire. Gangrene from pressure, as upon the shoulder and nates in patients who have been long confined is always preceded by inflamation. There is an erysipelatous blush with vesications preceding the mortification, gangrene following from inflamation.

Stimulation is a most destructive practice. By it we increase the inflamation which precedes the

gangrene. I believe the gentle antiphlogistic treatment is the best. I have seen cases, where the pulse was hard and corded; and the secretions arrested, injured and the mortification increased by stimuli. I wish to impress upon you the benefit of relieving the inflamation. There are such things as partial mortifications. I have seen patients with livid spots upon them completely cured by bleeding, leeching, Calomel and antimony.

Exhaustion of the power of a part effects the system. Absorption of the putrid effluvia will depress the energies of the system. The inhalations through the nostrils wile contaminate and deteriorate the fluids. Prostration will arise. The skin will be covered with a cold clammy sweat. The pulse becomes weak; the extremities cold; there is hiccough and sighing; the breathing is feeble. In these cases irritation continues. I prefer giving Opium, 2 grains every 1 or 2 hours, brandy toddy, animal broths and a vegitable emulsion. We must continue this treatment until we relieve the irritation. Then warm the surface, and give

bark or angustura. I give a teaspoonful of Huxham's Tincture in a wine glass of vegitable emulsion, every hour. We may give Quinine 2 grains every hour. When the patient is roused I give ale, oysters, beef steake broiled, or well boiled eggs. If the patient is troubled with eructations or tympanetic distension of the abdomen I give the Carbonate of Ammonia. If you give Opium is this case, give that which is old, dry and hard, and not the tincture. In this state it acts as a tonic. We may give 1-2 or 3 grains every hour or two. As topical applications I use emolient and soothing poultices. Generally those of slippery elm, kept moist with lead water. To correct the effluvia I use a solution of some of the Chlorides, fomenting the part with warm water. I combine these with free incissions through the skin and fascia. In cases of mortification I always look for matter.

When the part has lost its vitality use charcoal. Moisten the part with an ointment flavoured with Kreosote and sprinkle it with the charcoal. By these means we have the

antiseptic effects of both.

This is a blister, with elevation of the cuticle and a chink which is called the line of demarcation. Over this line I apply emollient applications. The best is a poultice ~~with~~ slippery elm, sprinkled with a solution of the sulphate of morphia and acetate of lead.

The process by which the separation takes place is that of ulceration or absorption. The line of demarcation will sink through the skin, then through the muscles, tendons, and lastly the bone. It is one of the most beautiful operations of nature.

Lecture 9th. November 18th. 1842

Effects of burns, scalds and cold. The effects are produced by extremes of temperature. Whether by flame or scald the phenomena are the same, differing only when the flame forms an eschar.

When an escar is formed soft emollient poultices softened with a little land are the best applications. A lady in Northern Liberties met with a severe

burn, to which I applied poultices for 9 days. The eschars not separating so readily as I desired, I applied Kentish's ointment, from the use of which the part became worse. The use of poultices steadily maintained is the best practice.

Constitutional affection is never so severe from a burn as a scald particularly when the cuticle come off; the irritation is not so high. If a large surface of the cuticle be removed by a scald it is worse than when removed by the actual cautery.

In the treatment never irritate the surface by dressings. If called in before any thing has been applied, choose raw cotton moistened with whiskey or spirit of wine. Keep this on as it is not necessary to remove it. If the cuticle be removed there is a secretion of mucus or lymph upon the surface which protects it. By this evaporating lotion we keep down the temperature. After

After a high temperature to a part, if we resort to ice water, from the sudden vicissitude, it gives rise to a local commotion and shock to the

system. A burn produces a sudden stimulus to the part, stimulating the capillaries. The only way is to avoid another sudden vicisitude. Alcohol contracts the capillaries, and maintains an equilibrium of temperature. By it we prevent any fluctuation in the temperature, which is injurious if sudden, either from hot to cold or cold to hot.

I have also seen good effects from linseed oil boiled until it becomes thick then mixed with Litharge. A Farmer's Child, a daughter, scalded the hand as high as the wrist the cuticle coming off. On my arrival I found the father had spread the mixture upon kidskin, with which he covered the part. This application eased the pain and I permitted it to remain upon the part 5 days. I then removed it and the part healed without any deformity. The few nails that were lost were soon secreted again.

Any application that agrees for the first few hours I permit to remain, applying alcohol over it. I frequently find lamp or sweet oil and lime water applied, which I permit to remain, ap-

plying alcohol over it.

If nothing but the cuticle be detached, we can always insure cicatrization without ulceration. The lymph which is effused upon the surface, by drying, becomes the new cuticle.

I do not condemn the use of this ointment always. When the cuticle is not removed or vesicated it may be used. If applied when the cuticle is off it makes a troublesome sore, which is difficult to heal. In large and deep burns when the patient is cold and comatose, pulse weak, receding of the fluids from the surface, we may use Kentish's Ointment and stimuli internally. I have cured cases of this kind with it, but it always produces bad ulcerations. These are followed by granulation and cicatrices, which contract and produce horrible deformities. In such cases the stimulating treatment is the best. I have used the basilicon with fifty per cent of turpentine.

For all severe burns, where the cuticle is off where there is hurried excitement, rigors, delirium

and coma, the common practice is to give opium. This must not be given in large doses in coma, as we are very apt to have effusion from fulness of the vessels of the head. If it be given at all, give in small doses. Ammonia has been used with good effects, particularly in small burns.

Lecture 10th November 21st 1842.

Cold. The same sensation is experienced upon touching a cold, as a hot iron, that is experienced upon touching a red hot one, and the inflamation following is as violent. The effect, generally, is not typical.

The first morbid effect from low temperature is internal congestion. The system, where there is no predisposition to an affection of the of the internal organs, may react slowly from this state sustaining little or no injury. But if there exist a predisposition to disease from debility of constitution or local weakness it is apt to be excited. Thus a person who has had congestion of the bronchia is liable to have it a second time

from low temperature. So also are diseases of the liver, lungs, or joints, be excited. These cases only concern surgeons, when abscesses form, requiring the evacuation of the matter.

Another way is when partially applied. A person may be sitting in a hot room, near a hole or crack. The cold air which enters will fall upon a part producing a fluctuating excitement. This is followed by local pain and febrile symptoms. Common catarrh occurs in this way. This class does not belong to any subject.

Another is when there is a general or topical accumulation of excitability. When there is a return to the natural temperature enormous excitement results. It may be seen when parts, which have been exposed to a low temperature are held to a fire. When a part is exposed to a low temperature its excitability is augmented. If now suddenly warmed violent reaction of the congestive kind is apt to follow. We may have abscesses, or livid ragged ulcers called chilblains. These may result from heat after moderate cold. Persons may have these

from very slight causes after having once had them.
The person must never go near the fire after being exposed. Linen or cotton stockings should be worn.
For the cure I use cooling applications, and sometimes leeches.

To the part exposed I apply cloths dipped in cold water, or whiskey cooled with ice. Alcohol it would seem were too stimulating but it contracts the capillaries and by its evaporation keeps down the temperature of the part.

When the cold is intense parts deeply situated are affected giving rise to what is vulgarly called Frost Bite. The parts, as the fingers, toes, ears or nose then slough. These parts are sometimes actually frozen, yet by proper and judicious treatment they may be restored. They must be thawed by very slow degrees. The accumulated excitability must be worn down gradually. We must take many hours or even days in restoring the part to its natural temperature. Fish and other lower animals recover animation if thawed gradually but if suddenly they die from the intensity of the reaction.

Allow the part to reach the natural temperature by very slow degrees. Some do this by applying ice to the part, stimulating internally. The part may be surrounded with snow or ice. If stimuli are required give a few drops of brandy toddy and a small quantity of gruel internally. To these we may add injections. I would not hesitate to bleed if the excitement ran high. Evaporating lotions are best, keeping the patient in a cold room.

In one of our public institutions the case of a girl was treated by cold applications to the part, by stimuli internally and kept in a warm room. The part from the excitement that followed mortified, and I was compelled to amputate. There is no doubt in my mind had no stimuli been given, and the temperature of the room lowered this case would have terminated favourably.

Lecture 11th November 24th 1842.

Abscess. In books abscesses have been divided into the acute, cold, and infiltrating.

There are a great many varieties of acute ab-

scess, arising from their situation. Inflamation under the skin gives rise to an abscess different from one under a fascia or over a bone.

In acute or phlegmonous abscesses the parts yield and become distended; there is a circumscribed swelling, with pain, heat and redness. The swelling is circumscribed by an effusion of lymph into the cellular texture immediately around the part. There is absorption from the centre towards the nearest external surface. It points, is said to break, and is converted into an ulcer. Granulations shoot in to this ulcer. These contract drawing the opposite edges together; the induration is absorbed; the parts is cicatrized at the surface. The opinion of Hunter, that the excavation is done by absorption is no doubt perfectly true. Dmitt and some of the French writers say this is done by mortification of the molecules. Attending the formation of matter, there is constitutional disturbance, as chills with rigors.

If the part be examined before the discharge of matter, there will be found a softness and

fluctuation over the centre of it.

The timely practice of an incision, there can be no doubt is correct. The moment a fluctuation is felt make an incision, and after it apply soft and emollient poultices. This incision must be made in a depending posture, to favour the escape of matter.

These abscesses differ from Furunculus or Anthrax, they having for their specific character the formation of a core.

They arise from a puncture, bruise, from chemicals, applyed to a part, from changes of temperature, or after fevers.

I have stated they may be modified by position. When situated under a fascia or immediately over a bone, these may produce the most violent constitutional disturbance, as delirium or coma. The matter travels under the parts which binds it down. I have known the matter of an abscess under Sterno mastoid muscle behind the jaw, travels down the neck to the shoulder and sternum, getting in contact with the oesophagus. The lymph seals up the cells of the cellular texture. When it travels it does not infiltrate into the cellular texture, but breaks

it down. It seems large abscesses absorb air which causes them to putrefy. When these are punctured the matter will be found highly offensive and putrid.

Whenever we find pain, deep seated, with redness of the surface, we must bear in mind that the matter will travel. I have known from blows over the clavicle, matter to form, and travel towards the axilla under the Pectoralis Major and minor muscles. When the mat is deeply situated, the fluctuation is not distinct, and there will be no point. Over the part we will then have an oedema with a puffyness of the skin, and an erysipelatous blush.

Persons think there is a great difficulty in detecting matter. We must take the palmer surfaces of the fingers of both hands, - not the tips, - keeping one applied while we make pressure with the other. I keep one hand applied and make the impulse upon the surface with the other, over where I expect to find the matter. If there be matter, there will be a wave like undulation. There is no tactus eruditus. In this way tumours of all kinds may be distinguished from matter.

The proper plan to treat these, is, not to make a puncture, but a free incision, a couple of inches in length, through the skin and fascia. When the matter is evacuated apply a bandage to press the sides of the cavity together, leaving the cut open. When the abscesses are large, make 2 incisions. If there be an abscess the whole length of the make 3 incisions, one above another below, and a third between the two. Then apply a bandage. I first apply a bandage, then cut a hole through it over the hole in the skin. By this treatment I have known large abscesses heal in 6 or 8 hours. When the sides are pressed together, being serous membranes, they unite.

In Infiltrating Abscesses we must expect the part to lose its vitality. There is no barrier set up to progress of the matter by the lymph, which becomes infiltrated into the cells of the cellular tectum. This condition may be seen in cases of erysipelas.

We must make free incisions, and afterwards pressure. These incisions must be kept open and covered with poultices. As the cellular membrane sloughs, it appears in ropes at the openings,

and must be drawn out. These cases are liable to be in a sunken condition. Notwithstanding this, open the abscess. Give Ammonia, and if there be irritability Opium. If the system is wearing out from the discharge give bark.

The next are the abscesses by congestion; which the English term chronic. In these cases there is no inflamation. These are seen in scrofulous persons, or in what are called leuco-phlegmatic temperaments. There is a fluctuating, soft swelling attended with no induration or redness. In the discharge we see flakes of lymph. These are found in the neck or groin. Hunter called these abscesses in a part, not of a part, in consequence of the matter always forming there, and making its way to other parts. The matter travels, there being no barrier, the adhesive inflamation.

Lecture 12th November 25th 1842.

These abscesses are the result of a morbid nutrition. We frequently see increased secretion in a part as in diabetes, and in the intestines, unattended with inflamation. They are produced by a morbid peculiar-

ity of constitution. The fluids are charged with unassimilated fluids, which cannot be thrown off in the natural secretions, and are thrown off in different parts of the body. The matter travels to foreign parts. A lymphatic gland may suppurate from irritation, and the matter be found in a remote part, it gravitating and infiltrating into the cellular texture. These abscesses may arise where there exists no disease of a gland or caries of a bone. The matter is that which cannot be got rid of by the natural emunctories. I have seen infants born with them. They are nothing but a deposite in the cellular texture, occurring without disease of a gland or a bone. It is a morbid secretion into the cellular texture. The French think this matter is absorbed by the lymphatics from one part of the body and deposited in a remote part.

These abscesses require a modification of treatment. The constitution must be attended to more than the part. It is all owing to the primary process of digestion and assimilation, preventing the formation of sound fluids. We see the patient with pale lips, pale mucous membranes, and a waxey skin. The

blood drawn from such a patient does not coagulate firm; the proportion of red globules to the serum is less.

The patient must be put on a nutritious and easily digestible diet; the secretions must be corrected; pure air breathed. Tonics may be given when the secretions are corrected.

To promote absorption of the matter give mercurial alteratives with Rhubarb, Avoid bringing watery discharges as these produce irritation and increase the anemic state. The best that you can give is Socot: Aloes 1gr. Rhubarb 2gr Sap. Castile 2gr Cal. 1gr once a day until the stools become of the natural colour, that is of a bright yellow colour with a tinge of green; until the breath becomes sweet and the tongue clean. Then give the carbonate of iron or cancella alba.

When the general health is restored if the matter is not absorbed I give Iodine. The best form of administering this is in the Hydriodate of Potass in 1 grain doses, applying it at the same time over the part in the form of an ointment.

If the skin over the part be unbroken I prefer to leave the abscess untouched. If there be no disease of a bone I can cure the majority of them without opening. Coagulating lymph is found in these abscesses like strings of tow. If there be a bone or large gland projecting into there abscesses like an island it well keep up the irritation. If these abscesses are opened before the general health is restored, they are liable to be followed by a diffuse erysipelatous inflamation, with violent constitutional disturbance and irritative fever. Always avoid free openings. Above all do not allow these abscesses to ulcerate open. The matter will become putrid from the entrance of the air. Always avoid opening them when you can. When it is necessary to open them, do it by making a small opening as recommended by Abernethy. For this purpose prefer a sharp narrow lancet. Make the opening oblique, and through the thickest part over the abscess, to prevent the admission of air. Hold the lancet perpendicular, making a small cut, then carry it horizontal and in this way, enter the cavity

This opening will be a kind of valve. Do not make the opening into the most elevated part, but in the side of the elevation which is the thickest part. If there be a livid part avoid making an incision into that part, as it is liable to be followed by sloughing. Do not evacuate all the matter, only a part of it. By this we will at all events diminish the size of the cavity. Use no pressure to evacuate it. Introduce no instruments. Leave the rest to be absorbed. It is better to open again than to use force in evacuating the matter. Remove all flakes of lymph and matter from the wound and apply a strip of adhesive plaster drawing the edges together. These will unite by the first intention. Over this apply lint, a compress and soft bandage.

If the constitution be in a healthy condition there may be treated as common abscesses. The matter may be evacuated when healthy granulations will shoot and the part heal.

If there be a portion of bone or a gland projecting into the cavity the sore will be kept open.

We may then inject a solution of some of the chlorides or Nitric Acid to dissolve the bone.

Sub Cutaneous Abscess. These are met with in females and children about the nose and cheeks, causing a puffy rising of the part. If a free opening be made there will be a discharge, and the part will heal with a most horrible cicatrice

In these cases attend to the general health. If you make an opening, make a small and oblique one, discharging only part of the matter; the remainder will be absorbed. Never destroy these by caustic.

Bloody Abscess. These are found in all parts of the body. These are found in persons from marshey districts, those who live upon gross food; in confined apartments; intemperate habits. In these cases we are very apt to see it after a bruise, the blood running into the cellular texture. This sometimes coagulates. When this is the case in examining we find it cracks under the fingers. I have often seen the blood in joints crepitating. It is not the thunder clap crepitation of a fractured bone, but a soft cracking under the fingers. In these cases for

the first few days the part looks natural. Afterwards the blood percolates towards the surface, which becomes discoloured. Inexperienced persons think the part has mortified. This is commonly seen about the testicles and eyelids, and is generally venous blood. The part is not blistered, is not cold; there is no gangrenous odour; no air in the cells as in gangrene. After tapping for hydrocele, where a small quantity of blood is effusion it may percolate giving rise to this appearance.

These abscesses deserve little consideration, except the bloody abscesses in children. In these if the blood be situated under the pericranious tendon, it may give rise to inflamation of the bone, coma convulsions and death. These may result from careless management of the midwife; from instruments badly applied; in deformities from pressure of head on plane of the ischium; or from a rigid Os. tincae.

If this be outside the pericranius tendon, we must apply stimulating applications and frictions to promote absorption. We must follow this plan for a few weeks. If deeper we must make a small

and oblique puncture as stated. Do not these evacuate all the blood, but only about 2/3 of it. These employ pressure by means of a bandage.

Lecture 13th. November 26th. 1842.

I omited to mention another variety of abscesses. These occur in the natural cavities as those of the pleura, peritoneum and bursae mucosae.

In the large cavities effusion partakes of the charater of dropsys. There is fluctuation. We have evidence of this by placing one hand upon one side and tapping gently with the hand upon the other. If we apply the stethoscope, we will have what is called egophony, a sound like that in speaking over a large hollow tub. If this is not absorbed from the use of drastic purgatives, mercurials or diuretics, we must then perform the operation of paracentesis, which I shall speak of under the proper head.

When I speak of abscesses in these parts I mean circumscribed collections of matter. Following wounds we generally have an effusion of blood a collec-

of matter, circumscribed by an effusion of lymph and pressing upon the surrounding parts. When these collection take place in the abdomen we have a swelling, tense tumid and fluctuating. We can ascertain the whole extend, diameter and periphery of such abscesses. When I come to speak of the cavitys I will say more of this. I have seen these collections of matter treated over and over again for irritation and inflamation. Laennec says we cannot have a purulent effusion in the cavity of the chest, but I might give you many cases. I was called in to see a medical man who had violent pleuro-pneumonia, which was not subdued by proper depletion. His Physicians being absent from town I was called in. I found the intercostal spaces forced out, and there was distinct fluctuation. I introduced the lancet into the usual place for performing paracentesis and there gushed from the opening a quart of purulent matter.

These abscesses are surrounded by lymph. They sometimes ulcerate to the surface.

I have also seen circumscribed abscesses in the cav-

ity of the peritoneum. They frequently follow injuries in this cavity when not overcome when treated by only slight means. There are surrounding adhesions set up, suppuration in the centre, ulceration, and from the collection of matter pressure upon the viscera producing constipation of the bowels. The matter passing down may press upon the bladder giving rise to ischuria. I was called to see a boy who had received a kick from a horse upon the abdomen. He was vomiting stercoraceous matter and was unable to pass his urine. I drew off the urine with a catheter. Above the bubes I now perceived an indistinct fluctuation. I passed in a lancet which gave issue to a large quantity of matter. I will tell you more of this when I come to speak of these cavitys.

A common form of abscess is met with in the bursae mucosae. These little bodies are interposed between almost all where there is friction. They are liable to a great diversity of diseases, of which almost all practitioners are ignorant. I would advise you to attend to the anatomy of these bodies. In old bed rid patients we find these under

the parts pressed. Factitious or artificial bursae may be developed any where upon the body.

These bursae mucosae may be irritated and suppurate and form an encysted abscess. We have these under almost every tendon. Being always bound down they becomes sources of intense pain and severe constitutional irritation. Sometimes when over an artery which gives pulsation to it, they are mistaken for aneurisms. I have no doubt many arteries have been taken up mistaking these bursae for aneurism. When inflamed they becomes exceedingly painful, in consequence of the stimulus of tension. I have seen persons delirious from inflamed bursae. I have known others cry out from the slightest pressure, or from loosening it.

The proper treatment is active depletion. The pulse is rendered hard and corded and rises under the operation becoming full. After bleeding apply leeches, open the bowels and elevate the part. It is always better to do without opening them. If after these means have been tried you find no relief, make a small valve like opening as before stated. Do not squeese out the contents, but

keep the cut open, if necessary by means of a probe, permitting the matter to flow out. After this apply a strip of adhesive plaster and over it dry lint, a gentle compress and bandage. If it be situated on the extremities apply splints. By puncturing we cause the cyst to contract. If necessary open several times. If these are permitted to ulcerate open, we have an ugly sore discharging a sanio-purulent fluid, which is difficult to heal. Whenever we open an inflamed bursa we have irregular cicatrization and induration. Always avoid puncturing when you can. If cannot make the small punctures as directed.

There is a bursae mucosae situated between the Os Hyoides and thyroid cartilage, which is very liable to enlarge. I have found it impossible to cure this by puncturing, it always returning. I have sometimes seen it as large as an apple. In these cases I put a seton through it. This is done by passing a lancet through it, afterwards carrying through a few threads with a probe. This keeps up irritation and prevents a retention of the discharge. Sometimes I am compelled to produce suppuration in it by

means of injections of chlor. of lime. & sometimes bich: mercury. It always leaves an induration which may remain for years. It is always better to cure by antiphlogistic means constitutional and local.

Ulcers. I would divide these as in books, into the inflamed, the irritable, and chronic ulcers.

In inflamed ulcers there is a bloody ichorous discharge, the surrounding parts are inflamed and painful. These occur particularly in the lower extremities. The person living as usual and walking the wound does not suppurate or granulate.

These are easy of cure. We must enjoin rest, with an elevation of the part, evaporating lotions over it, with cathartic medicine. If the pulse indicate excitement draw blood. We may apply a poultice. By this treatment it will suppurate granulations will shoot up and healthy pus be secreted.

The whole secret in all ulcers is to convert to a healthy ulcer. These all surgeons cure by strips of adhesive plaster and a bandage. These strips may be cut ½ or 1 in in breath, and in length sufficient to go ⅔ round the limb. These may be applied

commencing 1 in. below and ending 1 in. above. There should be a small space left between them to permit the escape of matter. Over the strips lay patent lint, which I prefer moistening with whiskey and water or a simple ointment. Then I apply a bandage, commencing if it be on the leg, at the toes and carrying it above the sore, making the pressure equal. If the ulcer be situated a little below the knee carry the bandage a little above. If the pressure be unequal the sore cannot granulate favourably. We may now permit the patient to take gentle moderate exercise in the open air. This is the best way to treat healthy ulcers. Do not apply large plasters as they retain the secretions and convert the ulcer into an abscess. Poultices too long continued relax the parts too much.

<u>Irritable Ulcers.</u> After the inflamation is reduced in inflamed ulcers we may have an irritable ulcer. There is a gnawing pricking pain; small pointed and red granulations; these sore bleeds upon being touched; there is an ichorous, bloody sanious suppuration. This state is dependant on the general health.

For the cure of irritable ulcers we must correct the general health. If I meet with them in intemperate persons I begin the cure by giving an emetic. This I follow with cathartic medicine, giving blue pill which will correct the secretions and improve digestion. If there be irritability of the system I give Opium. To the part emollient applications are best. Wash the sore with warm water by holding it over a tub and pouring from some vessel. Then apply the poultice of slippery-elm. I sometimes add a solution of morphia or sugar of lead to the poultice. By this treatment the granulations become healthy, the pus healthy, and the ulcer heals.

<u>Chronic & Irritable Ulcer.</u> The discharge from these has been considered a drain from the system preventing apoplexy and other affections which it were dangerous to check. The doctrine of their necessity is now exploded and we generally cure them. Where there is danger from arresting the discharge, we create a new one by means of blisters or setons which may be gradually healed.

We cure these by mild courses of mercury. I give of Calomel ½ or 1 grain twice a day, with laxative medicines and diluent drinks. I sometimes give Sarsaparilla. Apply adhesive strips to keep down the elevated parts, and over them an emollient poultice.

Sometimes these are so old and callous at the edges that it is impossible to cure them in this way. I then remove the indurated parts, by pearing them off with a sharp knife. Sometimes I destroy them with Caustic or Nitric Acid. When removed or cauterised, apply an emollient poultice. It is sometimes necessary to give tonics.

In very broken constitutions we sometimes meet with a gangrenous or sloughing ulcer. There are livid gangrenous spots about the sore, which is fœtid and painful. These sores are sometimes the result of a specific poison as stated by Carmichael. If we inoculate a person with the matter of this sore it will produce another in the person inoculated. There can be no doubt of this as I have seen 2 cases.

To cure these I apply undiluted Nitric Acid to them. I protect the sound parts by an ointment; then apply a layer of lint over which I pour the Acid. The pain is very great for 5 or 6 minutes when it subsides. After removing this apply a poultice. Under the treatment the sore will look healthy in 4 or 5 days. Every kind of sloughing ulcer better be treated in this way. In every case it checks the progress of the gangrene.

When we have the chronic sloughing ulcer, where there is erosion attended with a knawing biting pain, constituting the phagedenic, active escharotic are the best applications. These may or may not be connected with the venereal.

For the cure use the Caustic Potash. Peal off the outer cortical part and apply the inner. Then apply a poultice.

If the edges only are in this state, called the phagedenic horse shoe ulcer, cauterize only these parts.

Lecture 14th. November 28th 1842.

Wounds. Incised Wounds. These are the most common things in Surgery. The smallest cuts by a desiccation of blood form a scab and heal in that way. These small cuts always heal exposed to the atmosphere. When these are met with in the palm of the hand, it is the best plan to apply a thread by means of a needle. Where parts are much moved or there is much friction the scab is liable to break. It is then better to treat by plasters or needles, bringing the edges together to prevents its being converted into an ulcer or abscess.

Always examine wounds to see if any foreign bodies be present. Whenever a wound penetrates so deep as the muscles, we always have bleeding. The blood acts as a foreign body.

Avoid broad plasters. By these we close the orifice completely, retaining the fluids which create irritation and throbbing, and convert the wound into an abscess. I do not allow lint, bandage or anything over a wound unless I have waited some time or all the leaking has stopped. When I re-

move a breast or amputate a limb I always wait 3 or 4 hours until the oozing has ceased. The most trifling effusion exculation or hemorrhage may convert it into an abscess. In all cases I use narrow strips of adhesive plaster. I prefer Griffiths to any other. The isinglass plaster is very good. If the wound has opened blood vessels of importance we are sometimes compelled to stop the hemorrhage. This is done by applying cold; by pinching the artery. Pinching the artery is bad practice. The best is the ligature. Take a tenaculum or spring forceps with a serrated extremity. Always use these when the vessel is not large; when from the size of a crow quill and under. Hold up the vessel with the tenaculum and put a ligature around it. The knot is sufficient. When I take up a small artery I prefer the sailor's knot called the double reefed knot. Instead of making 1 turn as in the common knot I make two. This knot never slips. In making the last half of the knot make only a single turn. In hemorrhage from the uvulae or tonsils we can apply the double reefed knot with-

out any difficulty.

Surgeons generally bring the ligatures to one corner of the wound. To do this they sometimes leave great length of the ligatures in the wound which create irritation and suppuration. The best plan is to take them directly out. We then have only a small drop of pus where the ligature runs while the rest of the wound unites.

Apply strips of adhesive plaster between the spaces left by the ligatures, drawing the lips together. Over this apply only light strips of lint. Then apply a roller as lightly and equally as possible.

This treatment always insures union by the first intention. Use these means in the treatment of small and large wounds.

Always cut off one end of the ligatures and carry the other to the nearest part, applying the plasters between them. They act like syphons conducting off the secretions.

I will say a few words in regard to the necessity of sutures. If we have a deeper wound caused for instance by the removal of a tumor, the lips

are undermined and there is danger of their becoming inverted. I have been obliged in some cases to cut away the lips. In all cases of oblique, lance, or undermining wounds there is danger of the lips turning in.

In these cases we are generally obliged to apply the bloody suture, called interrupted suture. For this purpose I prefer a common very sharp pointed cambric needle and cotton. Carry the needle from the one to the other side of the wound, tieing the ends in a common knot. If the wound be long others may be applied ½ or ¾ of an inch from the first. Do not tie the knot too tight. Be content by merely approximating the edges of the wound. Take the smallest portion of integument. Cut off the ends close to the knots, and then apply plasters between them. Carry all ligatures from the blood vessels to the knots which may be placed at the nearest point. Over these apply lint, and if there be danger of effusion moisten it. Whenever there are deep wounds apply bandages. Always make the pressure equal. If the wound be on the leg begin at the toes.

Some surgeons leave the heel exposed. Always cover this with the bandage. Reflect it so as to make the pressure equal. Always carry the bandage over the joint above the wound.

The old surgeons thought it necessary to stick from the bottom but this is unnecessary. There is danger of exciting irritation which will defeat the union. Where the wound extends deep among nervous and tendinous parts there is danger of mortification or tetanus. The sides may be kept in apposition by compresses and a bandage. In transverse wounds relax the muscles by keeping the limb flexed. In longitudinal wounds there is not so much danger. Apply a compress on each side of soft lint. and over it a bandage which will keep the muscles from contracting. Permit the fluids to run from the orifices. Apply no ointment to close the outside of the wound.

Lecture 15th November 29th 1842.

Punctured Wounds. These wounds differ materially from the incised. These are not usually attended with hemorrhage. The instrument by which they are inflicted

may enter tearing down the cellular texture and not enter a vessel. They create violent irritation. This is done by the stimulus of tension streching of the parts. These wounds are liable to be followed by what the French call a strangulation of parts.

On account of this strangulation the old surgeons laid open the wound to the bottom, cutting through the integument fascia and muscles, making a wide surface at the top. We avoid now making an incised wound at first. We enjoin rest low diet and diluent drinks allowing adhesion to take place. If inflamation and stimulus of tension arise with constitutional disturbance we then make an incision, only tolerably deep however. This will remove the stimulus of tension and allow all fluids that may have collected to escape.

Those punctured wounds which have not been made with a sharp body are liable to hemmorshage. This the patient when no vessels of importance are wounded can generally stop with his finger. If the limb becomes swelled

and tumefied from the hemorrhage we must then cut down and take up the bleeding vessel. In all cases where you see tumefaction from hemorrhage they must be treated so.

If foreign bodies as cloths, splinters of wood or the like are carried into the wound and can be felt hard under the finger we must of course immediately cut them out. These are not generally felt until they have created irritation and suppuration. We then have fluctuation. Then make an incision and they will come out.

Lacerated & Contused Wounds. These are of a graver character, and in which we have a more severe constitutional disturbance. In these cases we have a tearing of the parts. From the laceration we are apt to have an overwhelming shock such as I described to you. Even from a contused wound on an extremity we may have a cold surface with great prostration. In several instances I have known them to faint without the loss of the smallest quantity of blood.

When cases react slowly from this state. During reaction we may have vomiting and sometimes delirium. We also sometimes have disturbance in the circulation, in the heart, lungs and sometimes the bladder.

When this disturbance arises on account of it we must resort to constitutional treatment. If the patient be feeble and prostrate with a cold surface, we must administer stimuli.

Treatment of the part. From the peculiar character of the wound contusing the blood vessels or lacerating them there is generally no hemorrhage. I have seen the skalp torn from the head without hemorrhage. There is no immediate effusion, neither is there danger of it afterwards. The powers of reparation are enfeebled very much, yet we can generally effect a cure by the adhesive inflamation. The union is effected by an effusion of lymph. On account of it uniting by the adhesive inflamation poultices are reprehensible. Adapt the parts to each other

and apply a roller moderately tight to give them tone. Be always content with moderate pressure. When no irritative excitement arises we can calculate on a union.

In Contused Wounds the part is converted into a gelatinous mass losing its vitality, and must consequently slough. This slough is detached by the ulcerative process of the vessels and the wound subsequently heals by granulation. Where a contused wound tears up a flap, it must be brought down and retained by stiches. Over this we may apply evaporating lotions, as dilute alcohol, leaving only the contused point over which poultices may be laid. Poultices to the contused point, and cold applications over the other surfaces. When portions are torn up in this way they always unite only the contused point.

Gunshot Wounds. What is said in books with regard to the treatment of gunshot wounds appears to be correct. I will speak of only a few points in regard to them.

Surgeons say where the bullet enters there is only

a small hole and upon the opposite side where it comes out the parts are lacerated. This state I have never seen but conceive how such might be the case if the ball passed through slowly.

As regards pain patients say they experience very little and sometimes none. I have seen the contents of a gun discharged in the axilla lacerating the nerves & vessels of that part and the patient complains of only a slight uneasy sensation in the part.

There is always constitutional disturbance in cases of gun shot wounds.

Most surgeons say there is no bleeding, other that the bleeding is large and others small. When a small ball enters there is generally no bleeding. Where a whole load enters as from a gun, shot wadding and all I have seen the most violent hemorrhage. Those writers are wrong who say the hemorrhage is profuse and those are wrong who say there is no hemorrhage. In some cases there may be and in others there may not be hemorrhage.

If the hemorrhage has been prodigious, when followed by excitement there is danger of mortification. When

there has been no loss of blood the case is more easily managed. When there has been a loss of blood we have irritable, when no loss of blood inflammatory excitement.

Ordinarily we need make no incision to take up a vessel. I have seen cases of immoderate hemorrhage producing fainting. During this state a coagulum forms at ~~at~~ around the mouth of the torn artery, some say as high as the branch above, If the artery be wounded it contracts if completely severed it contracts and retracts. If the hemorrhage is arrested in this way I always to let inflamation occur in the mouth of the artery. The coagulum is only a temporary check. Authors state it requires 7 or 8 days to obliterate the artery by inflamation. If the patient be kept cool and quiet I think the coagulum will be perfect in 4 or 5 days.

The coats of arteries may be contused so as subsequently to slough. We may then have secondary hemorrhage. When I see from the direction in which the body has passed it takes towards an artery, I anticipate this hemorrhage. We may tell this by

knowing the position in which the patient stood, and the direction from which the body came. Also by probing gently. If I find the pulsations in the artery below the wound, as on the extremetys, feeble and weak compared with that of the opposite, I think there may be secondary hemorrhage from sloughing of the artery. In all cases where this is observed hemorrhage must be anticipated.

The treatment now generally preferred, and that used by English Naval surgeons is that of cobling applications. If the patient be depressed and chilly employ warm applications. Never enlarge these wounds. English Surgeons use a layer of lint merely laid on the part. We sometimes keep wet with cold water or dilute alcohol. Do not apply bandages. Leave the orifices exposed. If you apply a bandage, if it be on the arm commence at the fingers, if on the leg commence at the toes. Then combat symptoms as they arise. If inflamation with the state of the pulse requiring it bleed and leech locally. If depression and exhaustion of the powers with sinking stimulate.

x See from indirect delusions

Lecture 16th November 30th 1842.

Poisoned Wounds. These wounds are connected with the reception of a morbid poison into the system. Medical Students receive this poison into the system from wounds during the dissection of dead bodies.

There are 2 ways in which these wounds may prove a serious injury. 1st. From the absorption of the morbid matter into the circulation. 2nd. From a puncture in an irritable and disordered state of the constitution. By confinement in a crowded lecture room, and sleeping in ill ventilated and fired apartments they become extremely irritable.

When a wound is made in such irritable habits, it is followed by a diffuse inflamation in the cellular, the limb swells and we have local and constitutional irritation. It differs from the absorption of virus which commencing in a part is carried into the circulation. It is worse than Erysipelas in running under the skin. There is hurried respiration and high action which the constitution is unable to support.

In these cases we cannot bleed so free

ly as in Erysipelas. Some surgeons say we cannot bleed at all. I have seen cases where the pulse was hard and corded rise under the operation becoming full and soft and the skin moist. We may resort to bleeding where the pulse is corded. Not active depletion as these cases will not bear it. Not more than 6 or 8 ounces. To the part apply evaporating and anodyne lotions. Correct the secretions by giving Mercurials and anodynes internally. When necessary apply Leeches. When fluctuation is distinct make incisions to relieve the tension. These will prevent deposit and infiltration of matter. When the matter is evacuated use emollients with a bandage. When the abscess is opened in this and erysipelatoes cases the iodine ointment is a capital thing. Support the Constitution by pure air permitting the patient be out of doors.

In other cases there is absorption of the morbid virus. These are usually not followed by inflamation towards the trunk of the body. We have rigors, intoxication, giddyness or coherency of

mind. The system suffers before the part. When the system reacts we have manifestations of great disturbance and tumult. Sometimes a swelling in a part of the body remote from the wound. The pulse is small and quick. The breathing is hurried. We now have inflamation in the wound showing itself. This produces an inflamation like Erysipelas and which is followed by gangrene. These patients generally die before suppuration takes place.

There are 2 periods at which persons may be affected from dissection of the body. The first is when making a post mortem directly after death, before the body has become putrid. I believe it is the halitus from the blood in this state which produces the poisonous effect. We notice this halitus in the blood of different animals, the horse, cat, and others and in them different. So in the urine of some animals. When persons die after child bearing of an erysipelatous inflamation of the peritoneum we observe this. In dissection after disease of the peritoneum it is always dangerous. Some surgeons

say when a cut is received there danger of inflammation of the serous membranes. It is better in making post mortem examinations to wait at least 24 hours until this nauseous odour is gone. This may sicken the person and poison the breath. I have known cases where ~~the~~ te was perceptible after several hours.

The next is in putrid old dead subjects. These may always contaminate by direct absorption. These may produce a diffuse inflamation in the cellular texture. We know that by absorption the fluids may be contaminated, becoming as in Typhus. The blood loses its power of coagulation and swellings occur in remote parts of the body.

With regard to the <u>treatment</u> nothing has proved satisfactory to my mind. We may give Opium with Calomel and Antimony to restore the secretions. A stimuli when required we may give Opium and Ammonia. You may give 1/8 or 1/4 of a grain of morphia to relieve irritability. Of the Carbonate of Ammonia 5 gr doses to keep up the strength. When the secretions have been restored we may give

the Sulphate of Zumine or Huxhams Tinc. of Bark.
When the part becomes tumid make incessions to let out the fluids, no matter where the swellings occur. Then apply emollients and antiseptics. Slippery Elm is the best wet with a solution of morphia and blackened with charcoal. We may use Kresote or a solution of some of the chlorides. By this treatment I think it is possible to save life.

There can be no doubt but oil on the fingers prevents the absorption of the virus. Whenever I examine a cavity I always make use of it. When dissecting always avoid points or spicular of bone. I had 2 students who died of consumption from scratches received in opening the chest of a subject. They both had diffuse inflamation of the cellular tissue; in one I was compelled to make 8 or 10 openings.

<u>Bites of Venomous and Rabid Animals.</u> More can be found in the publications than I can give you about these cases having had little experience. There can be no doubt but the timely evacuation of the virus produced by suction as the Old Romans used to do is the proper practice. Perry

applied cupping glasses over the part producing a revulsive effect with the poison, applying bandages above. I always resort to incisions. I seen 2 cases when the patients were merely scratched by the teeth of a rabid animal. These were treated by caustics but notwithstanding both died rabid. In a man, who was bitten the same animal and much more severely, I excised the part. This was nine years since and the man still lives. I cut out the part and promote bleeding by cups. In all cases of bites from serpents, rabid animals and the like the proper treatment is to excise the part. Draw up the skin pinching it between the fingers and remove it by one cut. This is better than to cut round the part. If, after cutting you observe any livid or other spots extend the cut deeper.

In regard to the general treatment I can say but little. I have known the case of a person who had been bitten by a viper, recover by the common treatment for local inflamation. There is no doubt this is the best way to treat them. If there be sinking give ammonia internally and

apply externally. As for the effect of remedies in Hydrophobia I think they are of little avail. Many cases of cures are given in the journals but I think they were not cases of Hydrophobia. One is given of cure in Baltimore by the use of Sacharum Saturni. The person who prescribed it acknowledged to me that he was mistaken. I cases of poisoning by the woorara they keep up artificial respiration by means a bellows. It has been recommended in Hydrophobia.

Lecture 17th December 1st. 1842.

I now come to the consideration of <u>Local affections</u> and first of the <u>head</u>. At this time I will say nothing of affections of the scalp, or of the bones, but of injuries of the brain which result from falls, or blows, the skull remaining entire.

Of these injuries there a great many varieties. I will notice three. 1st Class those which follow immediately after the injury, and characterized by great depression of the vital energies <u>Concussion</u>. 2nd Class. By oppression of the organ <u>Compression of the Brain</u> 3rd Class. Those marked by excess of action in the

brain and whole inflamation in the brain.

These 3 classes following injuries of this organ are distinct and separate. Sometimes we see the symptoms of all 3 exhibited in a patient, but generally only those of one of two of them. Sometimes the symptoms occur distinct and follow each other in succession, running from one into the other. I will endeavour to make it as plain to you as possible, and will first give the symptoms of each.

Concussion. This follows immediately after the injury is received. Some say patients have walked about and then fell. This cannot be correct for it is immediate. When the person has not concussion at first and this state follows after some time, it is a fainting or collapse of the system. It is a mistake that concassion follows at any time after the injury.

It is supposed to result from a jarring of this organ. When it results from slight causes, these do not produce any organic lesion, but merely cripple the energies of life. The patient is weak and torpid with a cold surface like that which is

seen in common syncope or fainting.

When a more severe injury is received as a fall from a window at a great height, there may be a contusion of the organ leaving the part blood shot.

When produced from a very great height, the brain is generally lacerated, this being generally at the base of the brain. The crura of this body are liable to be ruptured; or there may be a rupture of the blood vessels.

We may have concussion from ~~there~~ in the slightest stun, merely staggering and weakness directly afterwards reacting and getting up to the overwhelming shock, where the surface is cold, a mere trembling of the heart and arteries, disordered respiration the action of the diaphragm being scarcely perceptible and merely sufficient to keep up life, abolition of all muscular power there being no motion perceptible, and insensibility to the action of any stimuli. Between these two we may have every variety. It is impossible to fix on any one form. They may run into each other. You must not expect to find in the

few pages written upon it in books any thing satisfactory. Abernethy on injuries of the head is the best article.

The symptoms of concussion are like those of fainting from excessive depletion. There is coldness of the surface with a diminution of the vital powers. The pulse is sometimes as weak as possibly can be; sometimes tremulous frequent and weak. We have all those of diminished cerebral and nervous energy. The patient sometimes when roused will grunt; will sometimes give an imperfect answer to questions put to him showing a low degree of the power of comprehension. In some cases they are just as stupid as a log. You may shake and pull them and they take no notice. When slight they always give some signs of life. There is a great variety in the form and manner of disturbance. Some are thrown into convulsions. They will froth at the mouth, clench the jaw, and fists, and struggle, and toss about the room. Some have very violent spasms. In some cases both pupils will be dilated in other cases only one. They are often contracted. Authors say they are insensible

to the action of light. But if you open the ~~light~~ eye and permit the light to enter, you will see the pupil move.

The symptoms are like those seen when a person bled to fainting. They sometimes vomit, sometimes become delirious, sometimes have disordered respiration, sometimes the feces and urine pass off involuntarily and sometimes we see them thrown into convulsions. Almost every variety occurs in fainting as is found in Concussion.

When not extreme, when no obstruction to the circulation it is followed by reaction. The heart acts and the blood is forced to the brain which recovers its action. When, as after a fall from a height, they do not react and remains insensible, cold debilitated merging into death then the most potent stimuli are required. So it is after bleeding. The great and sudden debility brought on by a fall or bleeding produces loss of cerebral energy the whole system becoming prostrate.

The consequences are different. When persons are bled moderately they react and recover. When bled

largely they react unfavourably

From concussion the system reacts under a disadvantage. The brain which has been disturbed, or torn, or its vessels weakened receives a preternatural amount of blood, which is likely to result in obstruction, like congestion or in inflamation. Sometimes when torn and reaction follow they may throw out blood which will produce compression

Reaction is desirable but it must not be too high, neither must it be too soon. When called in do not resort immediately to means to produce reaction. Slow reaction is better which permits the vessels to contract. The coagulum which forms resists subsequent danger of effusion. Sudden recovery is not desirable and above all violent reactions.

In <u>moderate cases</u> with a small pulse it is better to leave them alone. Place them in a cool air remove all bandages about the body head and neck and allow them to react in slow degrees.

Only when the pulse is gone and the patient is cold and insensible must we aid.

The custom then is to resort to sternutatorys to

rouse the heart into action. Stimulating sternutatorys act very applied occasionally. Do not use so often as to render impure the air. Use frictions to the extremitys with warm hands or warm napkins; ~~there~~ are better than lotions. Then lower to head to favour the afflux of blood to the head by gravity. If this treatment causes the patient to sigh you may be sure reaction is coming on.

Where there is an extreme case use injections of brandy or turpentine. You may use 1 to 2 ounces of brandy with gruel. At the same time keep the head low, use sternutatorys and remove all ligatures.

When the system reacts if there is a full meal on the stomach they are apt to vomit. It is good to favour this. If it should not occur promote it by giving a gill or ½ pint of warm water. If it does not then follow give common salt or mustard, and if necessary Ipecacuanha or Sul. Zinc. If it be permitted to remain on the stomach it cannot be digested and will produce distressing effects. When the system reacts we must prevent this reaction being too violent. Some bleed before reaction takes place, which

is murderous practice. After reaction if there be high excitement with a full pulse draw blood. Do this moderately. This is not often necessary only in plethoric subjects. If the system react a second time draw blood again. Never allow it to become so high as to dilate the vessels and produce effusion of blood. Raise the head and apply cold applications. Use cloths kept wet with cold water or a bladder partly filled. If there be much hair cut it off. See that the bowels are operated upon. If necessary use leeches.

I must caution you about thinking too light of concussion. When the patient after some time talks and laughs they are apt to think too light of it. It is always better after these injuries to confine to a moderate regimen, operate on the bowels, and keep in house.

Compression.

After a person has undergone the phenomena of concussion, and reaction has taken place, we may have an effusion of blood producing pressure on the brain. The patient falls down in a senseless state. He has stertorous breathing. There is a

After — gladness — senseless — some fall with
great degrees

great degree of prostration. The patient is not cold pale and pulseless as in Concussion; there is increased temperature, the vessels are distended with blood and the eye engorged. There is vigorous arterial excitement accompanied by as great a degree of loss of power. There is snoring and stertorous breathing; the pulse is slow and full; the pupils are distended insensible and immovable; there is slow laborious and stertorous respiration. These do not arise from mere pressure on the brain; there may be a slow pressure as the growth of a tumour and the brain become accustomed to. It is the effect of the morbid action of the vessels assumed in carrying on the circulation. These do not come on immediately. Some days may elapse after concussion before compression.

Lecture 18th December 2nd. 1842.

Compression. I will endeavor to give you as clear an idea as possibly can of compression in its simple form. When the system reacts from concussion, the ruptured blood vessels throw out blood which compresses the cerebral substance.

The case of pure, or simple compression, is marked by arterial excitement. There is insensibility and

loss of muscular power marked by oppression then debility; the pulse is full and strong; there is a gurgle deep about the palate; the breathing is strong and vigorous; the skin is warm; instead of the cold and deadly pale skin as in concussion we have it warm the pupils are dilated, and fixed, and insensible to the action of light. In some cases the whole body is not paralysed; when pulled and pinched they will show signs of sensibility in one side constituting hemiplegia. In a majority of cases there appears to be complete paralysis; but in slight cases when pulled they will grunt. This shows a mild compression on one part of the brain, while other portions are only slightly compressed. In severe cases the whole substance of the brain is compressed. There may be compression of one part with increased amount of blood in another. When we bleed such cases, elevate the head, and open the bowels, we diminish the local source of compression while the other side is relieved. One side begins to move and feel; the mind which be-

fore was torpid, shows some feeble degree of apprehension.

In severe cases, where the arterial system has reacted vigorously and there is compression of all parts of the brain there will be a relaxation of all the voluntary muscles. The sphincter muscles are relaxed as those of the anus permitting the escape of the feces, the breathing is low and the pupils are immovable.

In mild cases there is sometimes only a loss of power on the side opposite to the one compressed.

There is great diversity in other forms. In those above the brain is sound; there is no rupture no depressed bones. From there we have them up to where the skull is fractured and depressed; the brain lacerated; and indeed every possible variety.

There is sometimes no distinction between compression and concussion. The patient sometimes never recovers from concussion. The brain deep in its substance has been injured. Before concussion has disappeared compression has supervened.

It is hard to say what are the different conditions in each. In compression the pulse is one of excitement; there is no power over the muscular system; he is torpid insensible and motionless, sometimes only one part is immovable as one side or one limb; sometime spasms like those of tetanus. A great many varieties occur. The symptoms which generally occur are those of concussion intermingled with those of compression. It is extremely difficult to give a name to any one. You see a perplexing condition. When there is an organic lesion of the brain and the system reacts they are all intermingled.

That class which requires trephining where there is no external wound, I will next consider.

Suppose a person has received an injury and therapeutic remedies have done no good and you apprehend a fatal termination: in this case it is required. In concussion, trephining is never required. Even where caused by spiculae of bone, elevation will not relieve the concussion. In cases of compound fracture with concussion, I have removed the bone and there was no relief afforded.

Where the bone is sound and there is functional derangement of the brain contusion of that organ with symptoms of concussion the operation is not required. Only when there are certain signs of compression is this operation required. In effusion into the ventricles or base of the brain this operation is not required because the blood cannot be got out. It is only when the effusion is between the internal table of the cranium and dura mater can we operate.

In the great proportion of cases the effusion is situated round the ramifications of the middle artery of the dura-mater in the region of the temples. The bone is more easily fractured or jarred in this place than in any other. This artery running outside of the dura mater, and sometimes in the bones of the cranium. The coats of this artery are not strong but are very easily torn. From it if sudden reaction take place there may be an effusion of blood. This may run to a greater or less extent pressing in the dura mater.

When we have a pure case, not complicated with compression, where the patient got up, talked

and afterwards when the blood was circulated with some force, had giddyness, followed by sinking, and loss of the power of apprehension, here in all probability the effusion is immediately under the bone. At what part of the skull this is situated we generally judge from the spot at which the blow has been received. If after a blow we see a puffy tumour we examine the bone. The signs the older surgeons had was this. If after scraping up the periosteum they found it dry no oozing of blood from the bone they concluded the coagulum was beneath and had separated the dura mater. Now we have a pathological and physiological sign. We know that at the base of the brain the corpora pyramidalia cross each other. We know that paralysis must occur on the side opposite to the side compressed. We do not only look to the side on which the blow has been received but we look also to the condition of the muscles. If both sides are affected then the whole brain is in a diseased condition. If one side then the compression is on the opposite. We take both these into view. Authors say that in some cases the

palsy occurred on the side compressed. But they are wrong. From all the observations I have made I know muscular paralysis indicates compression on the opposite side. A person may receive a blow on one side of the head and be knocked down by it. He may fall upon a body receiving a blow upon the opposite which may give rise to internal effusion and paralysis of the side first struck. In this way I think they are mistaken. The French have what they call counter-coup or counter-stroke, relieving the brain opposite the side struck is affected but I think they are mistaken in this way.

The case in which the operation is required is where after the patient is giddy he staggers and falls; he has snoring and stertorous respiration, immobility and insensibility of the pupil, profound stertorous respiration, and strong pulse. Suppose we had bled the patient in this state, and by it he had recovered slightly his sensibility, then again falls into this state, we proceed at once to perform the operating of trephining.

Trephining. I commence this operation by making an incision through the skin then another to cross this making the two like the letter T. When a blow has been received I search in the part where the blow fell. When there is no mark I prefer making it in the middle region. Do not cut up the pericranium but remove this by cutting around the trepan with a sharp instrument. Some do this by means of a cutting instrument attached to the trepan. This is unnecessary as all can be done by merely passing a sharp instrument around after the pivot has been applied. There is danger of the bone dying if this be removed farther than the circle made by the trepan. If we find the bone dry and pale we have another indication of blood of blood immediately beneath. If there be no serous or bloody point we conclude the vessels on the inside have been removed, and the circulation is not kept up. Use the pivot for making the centre; it is unnecessary to use a perforator. When you have made a gutter in the bone draw up the pivot as there is danger of it entering before the saw. Work the instrument gently and

make the pressure light. It is scarcely necessary to move the humerus; good surgeons merely rotate the radius on the ulna. There is danger of cutting through the bone on one side too soon. When this is the case incline the instrument to the opposite. It is not necessary to have different instruments with segments of the circle removed as some surgeons have. When the instrument gets into the diploe it works easier and cracks more. When in the diploe examine if the instrument has entered at any part the internal table. We can examine by cleaning out the cut with something. A tooth pick is the best thing for this purpose. When the trephine has entered pretty deep I always endeavor to remove the portion encircled by it with the trepan forceps. When this cannot be done we may sometimes pry up the portion by means of the elevator. Do not pry completely out by means of this as there is danger of spiculae of bone entering the dura-mater. I prefer removing it completely with the forceps. When this has been done, to remove the spiculae of bone on the inner table use the com-

cow elevator. It is better than the lenticular of the old surgeons. By running this under the bone we detach considerable portion of the dura mater from it.

Some surgeons say when the coagulum is not found we must cut through the dura mater to search for it. When this is wounded in time of the operation patients almost always die. In time of the injury the part becoming inflamed is followed by healthy and adhesive inflamation which unites the dura-mater to the arachnoid. When we operate this membrane is in an irritable or inflamed state and by cutting it the case is almost sure to terminate fatally. The coagulum is not often situated between the membranes only at the base of the brain. But if, after I had removed the bone I found the dura mater protuding like a sack, and filled like blood and fluctuating, I would not hesitate to make an incision into it. In 40 out of 50 cases it is not attended with success. We must close the wound and search in another place, if this is not attended with success.

Lecture 19th. December 3rd 1842.

If a person after concussion lay 3 or 4 days, in a state like that of compression it may be owing to the quantity of blood in the brain from weakness. When you see this state keep down the pulse. If excitement bleed and if necessary follow by cups. Attend to the bladder. Although there is relaxation of all the voluntary muscles, and the feces pass involuntarily yet the urine will collect and the bladder become distended.

We have reason to infer the blood is under the bone, when the patient becomes sensible after concussion and then gradually becomes giddy and falls. When there is organic lesion of the brain the patient will not become sensible. I have never found the effusion in the front, middle or back parts of the head, without fracture. It is generally in the region of the temples. Sensitive paralysis may be on the same side of the body as the brain compressed, but all these nerves do not decussate each other. I have seen tumours on both sides of the brain and only one side paralysed, the pressure on one side.

preponderating over that on the other. This may be the case in fractures. There may be fractures on both sides of the head. On the side where the greatest pressure is made will be found the least paralysis. The one fracture may be the more extensive yet the actual pressure there will be least.

I would not always say the blood was under the bone when the patient had been sensible. In drunkards where the pia mater is gorged with blood, a blow may cause effusion from these vessels, which are weak in them, and not from those of the spinal artery. In strong and young subjects I would say it was, though not positive.

When the respirations are feeble and weak, the case is not favourable for the operation. We desire to have them strong and full.

Some surgeons say the operation must not be performed where there is no fracture of the bone. This is a mistake. I have read of 50 or 60 cases where it was attended with success. They say if the blood be found the coagulum cannot be got out. I have always found it comes out. They

had, not the signs we have now.

Injuries of the scalp and bone.

My treatment is there is different from that of other surgeons. I do not agree with in first shaving off the hair and then employing sticks or adhesive. I prefer to part the hair, put the parts in their natural situation and then plat the hair. Let the blood coagulate, keeping the opposite sides together by tieing the hairs. I do not do this in contused wounds but in simple lacerated or incised wounds. In this way there is less danger of erysipelas.

When you have a lacerated or flap wound in persons accustomed to wearing the hair short, the bulb is apt to be under the flap and become dead. Whenever you have a wound examine the flap; there may act as foreign bodies. We must take hold off and pull them out from within. They may be pulled from the outside but from the inside is better. Acting as foreign bodies they may produce suppuration or erysipelatous inflamation. If the flap includes a portion of flesh leave these alone.

As regards exposure of the bone we

must not think it must exfoliate. A flap that has been torn up, if put down again will adhere. If the part be kept soft, clean and moist, granulations will shoot from the surface and the two will unite. The parts must be wet for this to take place. I prefer the slippery elm emulsion or that of bran or flaxseed. Listons recommends the use of cold water. Apply lint keeping it wet with this. You must watch it lest it should become dry.

When the bone is injured I prefer leaving it alone when we can. In a simple fracture, where there is no uneasiness in the brain indicating an injury to the organ, no concussion or compression, if it be treated by antiphlogistics and evaporating lotions to the part, the patient will get well. I have seen them over and over again recover where great masses of the bone had been depressed. We see this in children. I have seen great portions depressed where there were no symptoms of concussion or compression, which gradually raised up. When there is a simple fracture not compressing the brain the general rule is to let it alone. We may

have an unequal fracture where the fragments may tiow in. I have never seen proper to make an incision to prevent their tilting in on the brain. In all cases I have let alone and they have got well. I have now a great many patients walking about with depressed bones, having no epilepsy, paralysis, or other complaint.

Compound Fractures. When we have a compound fracture with unequal and depressed portion of bone, we must cut down and remove the pieces. We cannot make the case worse. In compound fractures we are liable to have inflamation of the membranes or brain when these are compressed. We may prevent this by elevating the depressed portions. There are always more or less spiculae which will become dead and lie there as so many pieces of bricklat or stone.

The way to dilate the wound is to place the back of the knife to the skull and making the incision from within out. There is danger of cutting the brain when it is made from without in. Generally a single transverse incision will an-

over the purpose. The old surgeons used to cut away the angles. Those depressed fragments which are most likely to lose their vitality must be removed, and not only elevated. The old surgeons say we must apply the trephine over the sound bone, to get the instrument under the depressed portions. It is never necessary in fractures with depression. I take a common elevator for this purpose. You may use a scissors. In one case I used snuffers. I have worked all the pieces out with these. When the internal table is depressed I sometimes find it necessary to use Hey's saw. With this I saw off one of the most prominent angles so as to get at the internal table. I use it where the depressed portion of the external table is small. When the internal table is depressed extending far under the external, I will not say the trephine might not be necessary. When applied it should be about the margin of the fracture. It never should be applied on the depressed portion. The internal table is almost always more broken than the external, hence its name, the tabula-vitrea. In this case it

will not do to continue the trephine longer than than when it has passed through the external table. When the fragments are entirely detached they must be entirely removed. When they have remaining vital connections they may be left. The ragid margins of the scalp must be removed. I never use sutures. Apply a layer of lint over the part which may be kept wet with water. Or we may use of Kreosote 6 drops to 1 ounce of Alcohol Adhesive inflamation will take place under this application. I believe this application the Kreosote prevents fungus growth. I sometimes use to fungus growth 30 or 40 drops to the ounce. By this treatment granulations will shoot up, a ligamentous substance will form over the part and it will heal leaving nothing but a scar which is of little consequence on the head.

Lecture 20th December 5th 1842.

The manner in which the depression is closed after trephining is by the dura-mater and pericranium coalescing by the adhesive inflamation. There is no such thing as putting in pieces of silver or gold; there would act as foreign bodies. Some English surgeon has recommended putting back the piece of bone, but the idea is silly and absurd.

Inflamation of the Brain.

This is not generally appreciated by medical men. They think almost every arterial escitement after an injury indicates inflamation of this organ. But there is generally a considerable time between the injury and inflamation of the brain. In other organs inflamation follows much sooner. I have known 9 or 10 weeks to elapse before escitement has supervened. It generally arises from 4 or 5 to 20 days after the injury. I knew one case where it followed 26 days and another after 5 or 6 weeks. In inflamation of this organ we sometimes have vomiting; but you must not think that every vomiting and delirium that follow are

indicative of inflamation of this organ. If these were treated as inflamation ought to be, almost all of them would terminate fatally. These must only be moderated.

In inflamation of the brain the pulse is small, hard, quick, frequent; there is dryness of the tongue and skin; the eyes are impatient of light; there is delirium; there is vomiting which continues for hours.

In this we may bleed to almost any extent. It may be carried and should be to a greater extent in this, than in any other disease. I have bled in some cases 14 or 16 times and have followed these by cups and operations on the bowels until the patient has been left bloodless. I have seen cases where the patient could not hear the tick of a watch in the room; they would hear wagons coming at a great distance from the house which we were unable to hear. Here I have applied blisters to the head, keeping them on 8 or 10 days. In compression attended with a good deal of reaction and full

ness of the vessels, patients will bear more than in Concussion. In Compression I never bleed more than 6 or 8 times; if we continue bleeding here they will die; But in inflamation patients will bear enormous quantities. I have in some instances carry it to so great an extent, that patients required artificial respiration.

Lecture 21st, December 6th 1842.

Result of inflamation of the Brain. I have spoken of Phrenitis. It has been said to depend on pure inflamation of the membranes. I do not believe this. In inflamation of the membranes, the violent phrensy is not exhibited. When the violent symptoms are exhibited all is inflamed; all must be injected at the same time.

I grant we may have a low chronic phrenitis. There is dulness and slowness of apprehension; if a question is asked he pays no attention to it; if another be asked he will mutter out an answer to the first; he will get up, say to go to the close stool; he will go, but on coming back will not go to bed again but to the window perhaps; if in a hospital will

go to and perhaps with the man in the next bed, if left alone he is peaceable; there are no marks of excitement or delirium; the pulse is never tense, quick and rapid as in acute inflamation, but is frequently slow as observed in apoplexy; the secretions are not arrested, the bladder becoming over distended; the bowels are torpid and distended; the skin is frequently moist and soft, and not dry as in the acute form.

These cases never require active depletion. If bled only a few ounces; and this seldom. We may use cups, issues or tartrate of Antimony Ointment. With these use cathartics and irritation on the extremities by means of the mustard or Turpentine.

All means are uncertain. We generally have an abscess formed deep in the substance of the brain; between the dura mater and brain, or between the bone and dura mater. Sometimes we have a softening down of the brain, constituting the ramollissement of the French; and some think a mortification of the brain, but this is questionable. In either of these it is more like engorgement or congestion. In either we may have suppura

tion.

The question which arises is, Can we perform the operation of trephining for matter. The objection is no precise place can be fixed upon for applying the trephine. I have never known to take place when the bone was unbroken where success attended the operation when matter was sought for. In cases of fracture of the bone attended with suppuration the matter may be evacuated.

Lecture 22nd. December 7th. 1842.

Fungus. Hernia Cerebri. Here the cerebral matter rises from the cavity of the wound through the torn membranes. Some surgeons say this generally proves fatal; others say not using pressure and styptics; others cut off the protruded portion.

Very different forms of protrution have been described under the name of Fungus.

In one case there is suppuration in the cavity attended with the growth of granulations. When emollient applications have been too long used, there may shoot up to some height above the surface.

By pressure there may be made to contract, to

effuse lymph and cicatrise. They are nothing more than luxuriant granulations. I have seen these growing from the edge of the bone and dura-mater. If pressure does not succeed we may use the sulphate of Copper. If we keep the patient in a good condition using styptics and pressure these cases will get well.

Those who say this terminates fatal have seen other cases where the bone has been driven in, or where the membranes have ulcerated: Here then is increased circulation and when the membranes give way the brain rises. Here if the membranes have ulcerated or broken the protrusion looks rugid. These frequently occur after gunshot wounds. They may be pressed down if only moderate pressure be used.

These are not the severe cases that arise after punctured wounds, where abscesses are formed deep in the brain producing prodigious protrusions which almost invariably prove fatal. Authors talk of having punctured these afterwards using pressure and that cicatrization had taken place. But these cases must be exceedingly rare.

The only way to treat these is by keeping down excitement, leaving out the matter and keeping off the pressure. By this treatment I have lengthened the days of patients but have not affected a cure. I have used the oil of Creosote which coagulates the albuminous fluid on the surface. It keeps down inflamation and suppuration; it defends the lymph over the surface. This is our only plan.

Another is a protrusion of water like a bladder through the sutures or fontanelle after birth. I have seen this protrusion through the posterior fontanelle. I could press back the fluid into the cavity of cranium; when pressed back it produced symptoms of compression; the tumor was transparent and fluctuating. In this case it threatened ulceration; from this I determined to make an effort to save the child. I tapped this by means of a (cataract) needle making an oblique puncture, stirring it around to produce inflamation and adhesion. By this means the cavity was diminished. I determined to excise the part pressing producing symptoms of compression. The child took a violent cough and

died. These cases have been called fungus where there is protrusion of the membranes like spina-bifida. In these cases I endeavour to draw off by puncturing with a cataract needle and to produce inflamation in the cavity. If this does not succeed I tie up with a ligature the skin leaving it slough while the part beneath unites by the adhesive inflamation. This has been recommended by Abernethy, but I have not been so successful in following it as he has. All my cases of spina bifida die. These are of a different character from Hernia Cerebri.

Hydrocephalus. I need not detain you long with this. I had a case of a child which had rigors; it was stupid; its eyes protruded from its head. The parents had heard of a case of the kind relieved by tapping and insisted on my tapping this. I did it and drew off 72 oz of pellucid water. I left enough in to prevent the brain entirely collapsing. The child after the operation had no convulsions; was sensible; got better and I had some hopes it would get well. It lived several weeks when it died.

The operation of tapping is easy. You hold the instru

ment to one side, making an oblique puncture. We perforate the membranes and if necessary the lateral ventricles, drawing off the fluid. If there be much fluid and suddenly withdrawn the collapse would be too soon. The stimulus of tension would be removed too soon. We must only draw 6 or 8 ounces at a time.

I have a poor opinion of this operation in internal Hydrocephalus. In a case of external Hydrocephalus

The only way is to give the hydrogogue cathartics. I give the Elaterium in doses of 1/4 or 1/6 of a grain keeping up continued action on the bowels. I have had cases of cure from this medicine producing free action on the bowels with blisters to the head. I have had cases cured by Calomel giving 12 grains in the course of the day in 3 or 4 grain doses, until the stools were of a green or pitch like colour, using at the same time blisters to the head. Our surgical attempts have met with poor success. If ever I have a case I will resort to Elaterium before tapping. If I do tap I will only make a small puncture and draw off only 3 or 4 ounces of the fluid.

By this we will relieve the distention, after which the medicines will operate better. We see this in dropsy of the abdomen, when by relieving the distension, medicines which before had little effect will begin to operate.

Tumours.

Encysted Tumour of the Scalp or Neck. These are generally removed by dissection. This dissection is tedious and by it vessels are cut which bleed and require the ligature. The plan I adopt is, not to cut down to and dissect out the cyst; I always cut the cyst directly open throwing out the contents. I then pierce each side with the forceps and tear it out. I strong bands that require it may be cut across. By this there is very little hemorrhage never sufficient to require a ligature. I then bring together the sides by means of the hair, plaiting it. By these means I effect a complete cure in 6 or 8 days. It is a much less painful and bloody operation than the other. Many express their gratitude for the sudden relief afforded them.

Enlargement of the Parietal Hole. There is generally a small hole at the back and upper part of the parietal which I have in some cases seen enlarged. I had a case where a large vein emptied into it discharging its blood into the sinus. There was a varicose state of the veins down over the forehead, eyelids, and face. This child was afflicted with cerebral symptoms as convulsions. The Physician whose patient it was wished me to puncture the vein which I declined doing, I used leeches, but the child finally died.

Tumours of the bone.

Exostosis - Ebonitis of the English There a a great many varieties of this. It is produced by a slow inflamation of the external table with enlargement forming a tumour. These are generally about the size of a hens egg; sometimes there are several of them.

If we attend to these in the forming stage by depletion, purgatives, alteratives; by general treatment they will reach but a moderate state of development, by this they will remain stationary. I have over and over again seen them from the size of a hickory nut to that of a hens egg. I have had cases

where by this treatment there have remained stationary from boyhood to manhood. We very rarely perform an operation for the removal of them.

Sometimes they acquire an enormous size. In one case where the patient was not able to put on a hat from the size of it I removed it. I made an incision over it and found it hard and ivory like; along the circumference I could see the common porous bones. In this case I used Hays saw carrying it along the base removing it like an arc from the circle. Here the patient got well and the operation was attended with no inconvenience.

There is some danger in removing these tumours. A gentleman came from Pittsburg, having been told of the first case. He had a tumour situated over the longitudinal sinus, running obliquely from the right to the left side. It was hard and unyielding. He had cerebral disturbance; there was vertigo with fullness and determination of blood to the head; there was unable to attend to any business. Inasmuch as he could exhibit all the functions of a healthy brain I undertook to perform the operation.

When I divided the scalp I found the tumour dense and firm. I cut through it into the interior and found considerable internal hemorrhage; also that I had only removed the lid cutting through the fungus tumour beneath. I then cut with Hays saw all around the base and cut out the whole tumour. It measured 4¾ in in one and 3¾ in the other diameter. I then found the tumour projecting down into the brain. This part I dug out leaving a cavity which held 4½ ounces. When I got down I found the duramater had been depressed by the bone small spicules of which adhered to it. I removed all of these but the last. In removing this I tore open the longitudinal sinus. There was a sudden gush of blood from which the man suddenly sank. I made compression and succeeded in stopping it. I permitted the compresses to remain for 8 or 9 days dreading another hemorrhage if I removed them. At the end of this time I removed them and found the cavity filled with granulations. The surface cicatrized over and the man got perfectly well. That was 4 years since and he is still living.

Although generally considered malignant there has been no return of this.

The surgical detail is of little importance compared with the phrenological. The intellectual organs were not here invaded. Those of self esteem, love of approbation and firmness were. He was the bravest and most intrepid man I ever saw. He continued sitting up, swearing, stalling us not to take out his brains and the like until the last spicular of bone was removed when he sunk.

The phrenologists in this case were all puzzled. Both the organs of firmness were occupied; not one only, leaving the other to perform the functions. These were suddenly pressed and not removed the stimulus of tenovous being kept up. When suppuration took place the part gave up and this stimulus of tension was lost, as in dropsy after tapping; here we must use force after the water is removed. these organs became debilitated. Then injury of the mind shew itself. He became the greatest coward I ever seen; he would faint if I only cut a hair from his head; he was afraid to go out of the house for fear of burn-

ping his head and remained in this way until his return to Pittsburg when it was gradually restored.

We had no reason here to expect any effect upon the intellect. We must expect it would have effected the moral faculties. We ought to expect when pressure is made on the Cerebellum an effect upon the sexual propensities. I thought a tumour pressing upon the portion above the eyes ought to effect the intellect.

Lecture 23rd December 8th 1842.

The above was a case of Spina ventosa growing in the cancellated structure of the bone. Surgeons think this is an inflamation in this structure, terminating in suppuration and the formation of an abscess, the matter extending to parts around, and that this might be left out. This is a mistake. In scrofulous persons we may have an inflamation, and I have frequently seen it, in the small joints, as those of the fingers and toes, which will terminate in a secretion into the bones of scrofulous matter. This may be left out and these cases will get well. I have frequently seen this in the fingers and lower jaw and

others surgeons have called it a spina ventosa of these parts.

These are referred to, there was a red, soft vascular granular substance filling the bone. It resulted from a blow with a brickbat. It is as malignant and bad as osteo sarcoma. I conceive the only difference between the two is, osteo sarcoma grows from the outside and around the bone, and this spina ventosa inside of the bone. All former surgeons believed it might be malignant or not.

I had a case of a young man, who, while dancing felt a crack or break about the metatarsal bone of the great toe. A tumour commenced growing from the part, which at the end of 3 years was as large as my fists doubled. I removed the tumour with the metatarsal bone. On dissecting it I found it cellular, the whole bone involved and constituting the spina ventosa. At the end of 4 or 5 years upon the next toe I observed another tumour. For the removal of this the leg was amputated below the knee. On dissection I found this to be the osteo sarcoma. After recovering from this a fungus tumour broke out in the

neck, of which he died.

In these tumours where the bone is pressed out there is a dough like yielding or like an apple dumpling in a gum elastic bag.

Ulcers and Abscesses of the bone.

These are found more particularly in persons of a scrophulous habit and in those who have constitutional symptoms of syphilis.

In sub cranial abscess there is a dough like feel and fluctuation.

When we give sarsaparilla alteratives and the like these will be absorbed We must use in this case constitutional remedies.

We are often not called in until these have been opened or ulcerated open, when there is danger of long continued and disagreeable ulceration and caries of the bone which will extend by continuous sympathy.

We may use the paste pyroligneous acid or a solution of some of the chlorides. If there be inflamation or irritation soft emollient poultices of slippery elm moistened with a solution of some of the narco-

ies may be applied. To this we may use the constitutional remedies for scrophula and syphilis. If the bone present a sloughing or carious we may apply escharotics. The common plan is to apply caustic potash, but what I have found much better is to apply Nitric Acid. Cover the sound skin with some ointment, then dip lint in undiluted nitric acid and lay it on the surface pressing it with a compress. If this does not destroy it reapply the acid. This detaches the slough after which the bone granulates and the part cicatrizes over.

Another is a painful and indurated tumour below the scalp which I believe to be of a cancerous character. In extirpating these they will be found attached to bone, by ivory like fibres. The bone has a stellated strong and white appearance.

When under the surface of the tumour these ought to be removed. I have know the disease to return. I have seen in some cases the cervical glands affected, which I have extirpated. After I expose the surface of the bone I rasp it and then apply a layer of lint to it dipped in undiluted nitric acid. I apply this until I have produced an exfoliation of

the bone. If the whole portion be removed in this way the operation is always successful the disease not returning.

One of the most curious tumours of this region is one I have met with in the temporal region. The character of the tumour was not clearly indicated. Many other surgeons who had seen it were unwilling to remove it. The boy was 7 years old. The tumour had grown rapidly and produced vertigo and coma showing that the brain was affected. I made a cut into it and found in the centre a flexible elastic substance. It was a disease of the cancelli of the bone, the pressure causing absorption of the outer table. There were spikes of bone projecting up into the tumour giving attachment to it. I cut away the outer table cutting all around with Hays' saw. It was a fibro cartilaginous tumour into which I found 5 spikes of ebernious bone. Having removed the tumour I found the inner table ivory like. I then removed the inner table from the dura mater. The membranes coalesced and the part healed. It has now been 5 years and there has been no return. This is the

only case of the kind I have ever seen.

Going from the head downwards I will next speak of the spinal chord. This has been considered as an appendage to the brain. That this is the centre and the brain an appendage is no doubt the fact. All of the nerves come from the spinal marrow, and may be traced to it.

The spinal marrow is liable to similar injuries with the brain. We may have concussion from blows jars or from jumping. The sudden not being taken off by the extremities we may have concussion produced by a peculiar ascilation of fibres.

This concussion does not necessarily alter the condition of the mental power; neither the condition of the pulse or skin. There is a great variety in concussion of the spinal marrow. We may have a low temperature with paralysis of the parts below the injury; the secretions imperfect; the bowels torpid and motionless. We may find a natural temperature; the respiration may continue and the circulation keeping up natural temperature.

If no injury has been done to the bone there

cases may recover. By proper treatment I have known them perfectly recover. In the treatment we must first look to the bladder. In injuries of the spinal marrow this organ is rendered weak and torpid and cannot contract. If not aware of this, the secretion in the kidney going on, it will become over distended and never will recover its tone. It will become inflamed and when the water is withdrawn the mucous coat will lie in folds; finally it will ulcerate ~~open~~; the urine will get into the cavity outside and give rise to inflammation and death. We can tell the condition of the bladder by feeling over the regio pubis. A catheter must be introduced every 4 or 5 hours until the urine is expelled spontaneously.

The next is a distension of the abdomen from diminished peristaltic action. In this state we must use laxatives. Do not use hydragogues as these will produce the most injurious effects. Use mercurial alteratives. Blue pill in 2 or 3 grain doses with colocynth, aloes or Rhei. By this induce 2 or 3 mild actions from the bowels in the course of the day. This may be pushed until the gums are gently

touched. Allow mild food, as gruel or stale bread; after a reasonable time small quantities of meat.

Locally we may use counter irritation over the spine. Cups may be used over the part we suspect to be contused. If the lower extremities be paralyzed use them over the lower part; if the upper as the arms, use them over the upper part. We may use cups and leeches until we overcome the engorgement. Some use Croton Oil or Oil of Turpentine. I prefer the Tart: Antimony Ointment: We may raise 10 or 12 pimples with this above and below the part. We must not keep the patient at rest too long as from pressure on the parts, as the nates, we may create sores. Under these we must lay pads or gum elastic bags, with air - allowing the patient to turn, and change position. Under this treatment all the cases of concussion will recover.

If there be a fracture of the bones, pressing in spiculae of bone on the spinal cord & lacerating the membranes we cannot expect a cure. If spiculae pierce, grate and tear the spinal chord we cannot cure. If below the origin of the phrenic nerve, life may be protracted for a number of weeks. When be

how we may hope to keep up life for an indefinite period. I knew the case of a man who fell ~~with~~ his horse, which stumbled, upon the back of the neck. He had paralysis, but by attending to the bladder and bowels he lived for a year.

When there is a fracture we may use caustic issues, one ~~on~~ each side of the part, keeping up a discharge. This is all that is necessary

There is a curious phenomenon connected with injuries of the spinal marrow. If neglected these cases may have a paralysis of the muscles. There are 2 kinds of this paralysis. One in which there is a relaxed soft and flabby state of the limbs free from pain constituting the <u>atonic state</u>. The other the <u>neuralgic</u>. Here there is inflamation of the spinal chord. There is a slow inflamation or caries of the body of the bone. When the chord is inflamed which extends to the nerves there is stiffness, the toes are pointed; if the patient walk across the room the toes will catch in a crack he will stumble and fall; There is stiffness of the limb with twitching and pain. The more they twitch the greater is the pain. It is a mock

paralysis - It is very apt to supervene after cases of concussion, gradually, requiring 7 or 8 days. The irritation from the spinal marrow extends to the nerves, It is an unfavourable sign. When it is seen we may be sure the surgeon has not done his duty

We must use irritation over the spine, giving Calomel and Antimony internally, with warm baths. The calomel may be pushed to ptyalism. We may give Dover's powder to produce diaphoresis. Use cups over the part. By this treatment we sometimes overcome this but not often, particularly in old persons. The spinal marrow is sometimes found in a state of softning or ramallissement of the French.

Lecture 24th December 9th. 1842

Fractures and Dislocations of the Vertebræ.

I will speak more at length on this subject, when I speak of Fractures and Dislocations.

Dislocation. If the part be considerably dislocated be low the origin of the phrenic nerves the same condition will result as was seen after speaking of Contusion. Some say priapism occurs when a person has undergone cerebral contusion, but it cannot be set down as distinguishing a disordered state of the spinal column

The treatment, by many, for dislocations of the spine would destroy life. Some cases are given where the dislocation was reduced by turning the spine in an opposite direction to that in which the dislocation had taken place. This could only have been in cases with dislocation below the origin of the phrenic nerve. If dislocation take place in the atlas on the dentata, by turning we would tear the ligaments and destroy life immediately. Advantage may be derived by gradual extension made by bands fastened to the legs and

bed or by weights and pulleys. By this treatment we may hope the transverse processes will slip back.

Fractures.

For the cure of these we depend on the degree of injury done to the chord. If this be stretched lacerated or ruptured a cure is out of the question. We can only effect a cure when the chord is concussed.

The only way in these cases is to enjoin rest, keeping the patient quiet in bed. To prevent motion we may apply splints, one on each side of the spine by means of a bandage. If the part be contused or fractured rest is always proper. At the same time we must attend to the bladder, preventing an over accumulation of urine, and to the bowels preventing distension. We must also prevent plethora by proper depletion. We may give laxatives to keep up a gentle action on the bowels, always avoiding hydragogue cathartics. Strychnine may be of some service in these cases, particularly when late in the case paralysis exists. Where the fracture or concussion has been relieved

ed and nothing but a functional derangement of the chord exists, this may be serviceable. I have seen cures effected by it. Internally it has been given but I have little faith in it in this way. We may apply blisters along the spine, laying over the raw surface a cerate with which the strychnine is mixed. The salts have been used but the best is pure strychnine 6 or 8 grains to the ounce of cerate applyed to the blistered surface. When the sore heals make a fresh one. Magendie thought this medicine acted only on the paralysed parts, but this is a mistake; it acts on the whole system. I have little confidence in any specific plan of treatment; all must be done on general principles. Even Mercury is not a specific for the venereal. The longer I live the more am I convinced of this.

Fractures may occur, and be relieved from rest only. The plan of cutting through the muscles and sawing the bone or raising up depressed portions never succeeds. The operation is a serious one if the bone be depressed and the chord lacerated the case is an irremedial one. I believe I

never can be persuaded to perform this operation no matter how severe the case may be.

Here are sometimes curious paralyses following injuries of the spinal chord. From the peculiar manner in which the sensitive and nerves of motion come off from the chord, we may have partial lesions. From the chord being divided into 2 kinds of nerves these partial lesions may occur. If one is disturbed the part to which it is distributed is only paralyzed. In all cases the paralysis occurs on the same side with the injured nerve. We may not only have partial muscular paralysis but sensitive paralysis. We may have muscular motion in a part and in the same part sensation gone. These cases are very rare. Sometimes the sensation remains and the muscular motion is gone. We often see patients who can feel and not move the part. From the anatomy of the chord there can be no doubt these may occur.

We may have paralysis of the nerves as they go off from the chord independent of a paralysis of the part below. This may occur at the roots the

compound nerves receiving the blow instead of the spine. There may seeme the impression ~~the~~ impressions independently of the spine. I have seen 2 cases of this kind, where the blow was received on the back of the neck, paralyzing in both cases only the arms. In one of these the paralysis extended gradually to the muscles of the throat, and the patient died from an inability to expel a foreign body, blown into the mouth while open. In the other case the paralysis gradualy affected the whole body the patient becoming idiotic. This was caused by the inflamation extending along the nerve sheaths to the spinal chord

After cholic, strangulated hernia, or severe cases of cholera morbus we have often a temporary paralysis, particularly of the extremeties; and sometimes this is permanent. I met with the case of a printer who by close confinement became pale and dyspeptic. He was also subject to attacks of cholic. While running to his home on a slippery pavement after night, he suddenly had an attack of cholic from which he was unable to stand

He was sensible and stated that he left himself down rather than fall. He had paralysis of the lower limbs, and of the bladder. The surgeons in attendance were unable to introduce a catheter, and from their severe attempts made a false passage running the instrument back of the prostrate, still unable to make it enter the bladder. The urine accumulated, the bladder became overdistended, they were unwilling to puncture it, it ulcerated, burst, and he died from inflamation, caused by extravasation of urine. Post mortem examination revealed nothing more than an injection of the vessels of the chord, which they attributed to inflamulation, but which, I am convinced from paying particular attention to this subject was nothing more than a fulness of the vessels from the blood gravitating to them. The cause of this paralysis is from the nervous irritation extending to the chord.

Lecture 25th. December 12th. 1842

Curvatures of the spine. There are two very different curvatures of the spine. We have the serpentine, which is very common in young persons, particularly females of a scrophulous habit; and the angular distortion attended with a carious state of the bones. In this (the angular distortion) there is a chronic inflamation of the bone and suppuration. By some this is called broken back, and by others Potts disease, but the best is angular distortion.

In the one there is a flexible distortion attended with no disease. There is a laxity of texture; the parts are soft and yielding, becoming compressed, assuming the shape to which there is a tendency from position. They are generally met with forwards, frequently a lateral twist and sometimes backwards; not commonly from distortion of one bone but a yielding of all. This occurs in persons of a delicate leuco phlegmatic or scrophulous temperament, generally between 10 and 18 years of age. All cases are not only marked by these temperaments, but also by a softning of the bones. There are of an

inferior specific gravity; almost always the external coat can be cut with a knife easily. Frequently all the bones will float in water. All those of the carpus and tarsus also will sometimes float in water. I believe all the bones in these cases are weak and soft and of less specific gravity than those in healthy persons. In all animals that have great labours to perform, the bones have great specific gravity; in the race horse they are like ivory. All the bones taken from these sunk persons show less specific gravity, than those taken from healthy persons.

From these facts we draw inferences, as to the manner in which the cure must be effected. We must bring about healthy nutrition and assimilation; by this, good blood will be circulated and the bones strengthened. All close apartments must be avoided; exertion in the open air must be encouraged; all stays or corsets, or any thing confining the respiratory organs must be avoided; ~~the most~~ use healthy and digestible food; we must regulate the action of the bowels and ensure digestion.

With regard to mechanical means, as

the use of springs stays and the like, all of there are discarded by the most eminent surgeons. All of these must be avoided; education must be suspended or only a few minutes study at a time be allowed; the most active motion out of doors must be insisted upon; the heartiest food that can be digested must be taken.

We must begin by giving laxatives which are almost the only Therapeutic remedies we employ. If the breath be foul, the abdomen full and turgid, if in any way the evacuations are tar like or pitchy or clayey we always have intestinal derangement. To correct this we exibit Alteratives combined with laxatives. Give Calomel ½ to 2 grains or Blue mass 3 to 6 grains with a laxative to bring on 2 or 3 evacuations daily. By this the secretions will be corrected and the natural colour restored. When this is done we have all that is necessary from cathartics.

Then give tonics the best of which are the Chalybeates. Give of the carbonate of iron 10 to 20 grains 3 times a day; if the bowels be torpid combine with

his small quantities of aloes 2 to 4 grains or in the form of Pilsa picra. If the appetite is not good give 8 to 10 grains of Colombo with ginger syrup.

Locally I have no confidence in anything. Only in extreme cases will there be any necessity for springs or splints, or in those which are rapidly progressing. In this case keep a splint along the back and a bandage around the chin. Avoid all pressure on the chest; at the same time enjoin out door exercise.

The clothing should be sufficient to protect from the vicissitudes of temperature. Flannels or silk should be worn during the day; but we must not allow them to be slept in during the night. When worn so long they retain the secretions, become disagreeable and the effluvia are reabsorbed. This should be avoided in all delicate constitutions. They should sleep in muslin, not covered too warm, as the perspiration relaxes the system. Friction must be used on the skin with a coarse towell or flesh-brush. In the morning the patient should take a salt water bath; the water must be saturated with salt. This is done best by rubbing

the surface with a wet sponge or towel, then drying it, and using frictions with a towel which had previously been dipped in salt water and dryed. The use of specifics is never supported.

Caries of the Spine. This is very liable to terminate dangerously. It results from a slow inflammation of the bones and membranes. It frequently follows blows on the part but more frequently catarrhs and rheumatism. Young persons or those about the age of puberty are very liable to it. It may be in the ligaments or bones themselves; but more frequently in the intervertebral ligament; sometimes in the processes. There is inflamation and finally suppuration and caries of the bones.

The disease of the bone is not all. When matter forms it may run inwards, press upon the spinal marrow and paralysis will be the result. If this passes along the loins it forms the lumbar abscess; if along down behind the peritoneum and under Poupart's ligament producing a fluctuating tumour on the fore part of the thigh it is then cal-

led psoas abscess. These are the same as the cold abscesses which I have described, the matter travelling from its origin. One is an abscess in the thigh, and from the place where the matter originates, it is an abscess of that part.

In all cases of inflamation of these parts there is danger of neuralgic rigidity; but if the inflamation be properly overcome there is never this rigidity. There is a painful twitching of the muscles; if the limb be moved the patient experiences severe pain; the toes are pointed and if an attempt be made to walk he stumbles his toe catching in a crack in the floor. If this exist in one limb the other may very soon be affected the inflamation extending. This is the neuralgic paralysis. I have never seen the atonic paralysis until the neuralgic has been overcome. Here they never get well. The limbs are flacid, soft and cold and waste away.

In the early stages this may be relieved. When pain is complained of on pressure it is best to apply cups or leeches. 20 leeches may be applied 10 on each side or cups 2 to 4 on each side repeating them every 4 or 5

days. There can be no doubt but Pott's remedy is a good one. He makes an incision over the spinous processes, (some use blisters cutting off the cuticle) and then put on caustic potash. Some use tart. antimony ointment, some croton oil, but with these you will fail. The use of the caustic potash is worse than the actual cautery. I prefer to make an incision over the transverse processes through the skin then taking solution of potash or of Nitric acid to make an escar. If there be any hemorrhage use lint and a compress for 3 or 4 hours until it has stopped and then apply it. Sometimes I have cut down on the muscles. Over the escar apply a poultice. If it heal rapidly apply the caustic again, and by these means keep the sore running for 3 or 4 months to overcome the inflamation. By this treatment using laxatives and keeping the patient at rest the matter will be absorbed. The bony edges will be repaired and consolidated. By the time we have overcome the carries we will have the matter absorbed.

When this has taken place it is unnecessary to continue the antiphlogistic treatment; we must now give the tonics. Some give the Iodine, but this I

beline is too much the hobby of some men. If this be given in large doses, it inflames the mucous surface of the stomach and bowels; if in small doses it increases absorption. After the inflamation has been overcome in the part, iodine may be given, to promote absorption of the matter; but if this be given too long it promotes absorption of the sound parts. I have known it destroy the testes. I knew the breast of a female almost completely absorbed from the use of it for 6 weeks. Give the chalybeate tonics

When left with spasms of the extremities give the genuine and keep the bowels open, and this will afford relief

I wish to impress upon you the difference between the two curvatures. In the one caries, inflamation, and danger of paralysis. In the other there is never paralysis; there is no pain, no inflamation. In this, where there is no inflamation there is no use of leeches, cups or irritation to the spine. I have known cures of this curvature from strong diet and continual exercise in the open air not allowing the patient to sit or stand only for

a few minutes at a time.

If we find no pain we know there is no caries of the bone; if we find curvature, with sickening pain on pressure we know there is caries of the bone.

Morbus Coxarius.

This is a carious state of the bones of the hip joint like caries of the vertebrae. The one a disease of the spine, the other of the inferior extremities. There is first an apparent lengthening of the limb; after a while, when the discharge is absorbed, the muscles will be irritable and contract, and then there will be a shortening of the limb. In one case it is longer and in the other shorter. If the part be loaded with matter, and there be venous engorgement the limb is longer. But this only appears longer. If we measure from the anterior superior spinous process of the ilium we shall find the length of the two the same. The person rest upon the sound leg placing this in front of the other. This is only owing to a turn in the pelvis. It is only in the latter stage that the limb is really longer when dislocat-

tion takes place.

In the Early stage we have pain in the part, also generally in the knee, and frequently in the ankle. Whenever I am told that in a scrofulous disposition there is a disease in the knee I always examine the hip. If I see fulness in the part I then suspect this disease exists. The way to ascertain is to make percussion. If we strike on the knee we can tell if the upper part be inflamed; if the bottom by striking the outside. Always strike in several directions. The patient will always flinch if there be inflamation.

The treatment is the same as that for the disease of the spine. It is a slow inflamation attended with a discharge of scrofulous matter which travels down the thigh. It never points at the hip but always in a remote part.

We must treat by rest; if it be in a child we must apply splints. Use leeches, cups, and counter issues over the part; the same general treatment for disease of the vertebre. If the inflamation be overcome we may then use tonics with out door exercise. A physician of Baltimore has cut into

the capsular ligament 5 times successfully. I have cut into it in 2 cases where I perceived fulness. I run in the whole depth of the lancet and then cut into the capsular ligament with a bistoury. I left out about 2 teaspoonfuls of matter and all the disturbance subsided.

Lecture 26th December 13th. 1842

Painful affections of the head and spine. Of these there are two leading forms.

The one is a circumscribed but external pain occupying a portion of the periphery of the body. This, being confined to one side of the body is called Hemicrania; not passing along the nerves it is confined to the side. This is almost universally exhibited on the skulp in the fibrous membranes; sometimes it is over the mesial line.

When this is the result of catarrh or fever it is of little amount and will leave by acting upon the bowels keeping them open.

It is only when the pain lasts long that these cases come under our treatment. Many are

distressed, for a long time, with this pain, confined perhaps to as small a space as that of a half dollar or bank note, and then they come to us wishing some dreadful operation to be performed upon them as that of dividing the scalp or scraping the bone.

By ascertaining the deranged condition of the system accompanying the pain we can generally effect a cure. If we find a rheumatic affection we would use antiphogistic remedies. By depletion laxatives and perhaps counter irritation we commonly cure this. I never think of performing an operation when the pain exists with rheumatism.

When this is periodical, commonly regular in its period, occurring most frequently at 9 or 10 o'clock every morning or every other morning, I treat it as an intermittent. I clear out the primae viae and then give the bark. The best form for giving this is the sulphate of Quinine; of this give from 5 to 20 grains in a day combined with Colombo or serpentaria. This treatment with a well regulated diet will cure nearly all these cases.

Sometimes the pain is met with where there is inflammatory excitement like an inflammatory intermittent. In this case bark would do harm in the beginning. Here we must bleed and give cathartics until we have subdued the arterial excitement; remove all obstructions in the bowels and correct the secretions. When this has been done we may then give the quinine in large doses. I knew a case of 16 years standing cured in this way giving 20 to 36 grains of the quinine in a day.

Sometimes we meet with it in irritable habits, with a quick, small, jerking and irritable pulse, a dry skin, a dry tongue and a drying of the secretions. In this case we must treat it as we treat the irritable form of ague. Here I give the arsenic which acts like a sedative allaying the arterial excitement and irritability. I give of Fowler's solution 6 to 12 drops 3 times a day. It produces an oily perspiration upon the skin, and restores the secretions. This overcomes eruptions as we have frequently seen by its alterative ino-

pression; it makes soft the pulse and in this way overcomes the disease.

In very severe cases, where there is an obstinate, darting and distressing pain over a large surface, and the patient almost in fits we may give large doses of the arsenic. Here I give 20 to 40 drops 3 times a day with some aromatic tincture as that of lavender or paregoric which prevents gastric distress and nausea. By this I have overcome distressing cases. Over and over again by arsenic I have overcome them. I take of the crystals of arsenious acid 1/8 to 1/4 of a grain in pills with opium. The dose may be repeated from 3 to 6 times a day to produce some impression.

When I do not succeed after using the antiphlogistic treatment, laxatives, and counter irritation I resort to an operation and in this way sometimes succeed in relieving the distressing symptoms. In one case I took up five arteries going to the painful part and in this way completely relieved it. Over and over again I have effected cures by taking up the arteries

going to the part; in the same way painful affections in the eyes have been cured.

In other cases the nerve going to the part may be cut across. In making the incision we must allow the blood to be effused between the ends of the nerve to prevent them from uniting too speedily. It is a wonder this operation is not oftener performed, and I think the reason is that surgeons do not know the nerve which supplies the part. We must take the sensitive nerve going to the part. It is not necessary in cutting this to make an incision two or three inches in length, but merely running in a narrow bistoury, sweeping it along and cutting the nerve.

Another operation is cutting through the scalp dividing all the textures down to the bone separating the pericranium from the bone and allowing it to exfoliate. In several cases I have been compelled to separate this and keep up a discharge for several months.

When the disease is long continued and the external parts are altered, thickened this is our

only plan. Sometimes the bone is soft and thickened. In one case of a patient who had an affection of the brain, conceiving she had committed the unpardonable sin I seen this soft and thickened state of the bone. When pressed upon she would howl and scream. In this case I spread around the part basilicon ointment and over it Nitric acid. This formed an eschar destroying the parts down to the bone. This suppurated, granulated and healed the operation being followed by a perfect cure.

I seen the case of a man who received a blow upon the head in the riot in Bristol England. The parts around the scar were indurated and hard. He had a continual pain in the part, when a blow was received upon it he had an epileptic fit. None of the common remedies were of any service and I cut out the indurated portion around the scar severing all the nerves which were distributed to it. He had an epileptic fit during the operation which lasted for only a few minutes. After it was removed the irritating part being cut off he completely recovered; the pain left, and there were no

more epileptic fits.

In some cases a cure may be effected by making a crucial incision through all of the integuments down to the bone

If it occurs in venereal patients we must give the remedies for that disease; the sarsaparilla and guaiacum.

Lecture 27th. December 14th 1842.

Another affection, and one which is frequently associated with the other is Neuralgia, which is a painful affection of the nerves. This name is now given to almost every kind of pain; even to sore throat, pleurisy and rheumatism. Strictly speaking it is a severe pain, shooting along the track of a sensitive nerve. When a pain shoots transversely across the track of the nerves it is not probably a neuralgic pain. The shooting pains in rheumatism, as is frequently seen in the joints and other parts, it is not a neuralgic pain.

It is confined to a morbid affection of the sensitive nerves, along the course of which there

is a distressing, shooting pain. Sometimes a universal pain is met with, in which case I would call it a general neuralgia.

Whether local or general it must be examined in connection with the condition of the system. If there be any constitutional disturbance this must always be corrected first. Remove all kinds of derangements and by this in many cases a cure may be effected.

Rheumatic irritation is frequently a cause of neuralgia. When this exists there is a slow inflamation and thickening in the form of adhesive inflamation. This takes place in the Neurilima of the nerve giving rise to shooting pains along the course of it. When this state occurs in the muscular nerves there is a stiffness, rigidity of the muscles, and loss of motion in the limb.

Here by overcoming the rheumatic temperament we may frequently overcome the neuralgia. We may keep the part warm and excite action in the skin. We may in this case use Granville's Mixture, which is composed of strong

Aq. Ammonia, Strong Tincture of Camphor and Oil of Rosemary added together in various proportions. The Aq. Ammonia when pure is too strong to apply to the part the others being used to dilute it. We may apply this on a flannel, moistening it with the mixture laying it over and pressing it on the part, but never rubbing it. When the part is made red we have a sufficient degree of irritation created. It may be applied 3 or 4 times a day. We may use the Croton Oil or Iodine or any other gen the irritant. If any plethora exist it must be subdued by proper depletion. When we have subdued the rheumatism we generally have effected a cure.

It sometimes arises with a torpid state of the bowels, and obstructions in the hepatic secretions; this must be attended to. We must correct this by mercurial alteratives, with out door exercise.

Sometimes it is connected with a deficient action of the skin, in which there is a dryness of the surface; or with an herpetic eruption which are both sometimes causes of it, from the sympathy of all parts. This sometimes affects the eyes, the olfactory nerve and others not being confined to the nerves of common sense.

In this case we must correct this condition of the skin by proper attention to cleanliness; active diaphoretics giving antimonials in combination with a decoction of some of the woods or shrubs; by warm bathing or vapour baths; and by warm clothing.

Sometimes the neuralgia is so obstinate, that by these means we cannot overcome it. We must then take the patient through a regular alterative course. The common remedy here is Fowlers solution, which may be given in doses of from 6 to 8 drops 3 times a day; or of the Arsenious acid 1/8 to 1/4 of a grain 3 times a day. At the same time we must regulate the diet and give demulcent drinks. The arsenic will correct the condition of the skin, remove all obstructions and cures better than any other remedy.

In severe cases 20 to 30 drops may be given 3 or 4 times a day where smaller doses will not produce any impression. This remedy revolutionizes the state of the nerves, effects a complete change in them, and finally effects a cure.

Whenever any derangement exists in any part, no matter how remote from the seat of the disease, that might in any way be productive of it always correct that first.

Many cases there can be no doubt depend on Marsh Miasmata. Whether it be owing

to effluvia or magnetic phenomena (which it is now very fashionable to attribute the diseases near marshes to) we do not know. We may think it is owing to a peculiar magnetic phenomena, the chemist by means of his Eudiometer being unable to detect the differences between marsh and other airs. It is said to be produced by putrefaction of vegetables, but this they have never been able to detect.

The intermittent forms are frequently produced from the same causes that intermittents are. Whenever this comes on every day or every other day, generally in the morning continuing throughout the day leaving the patient free from evening until the next morning, it must be assailed as an intermittent.

When the paroxysms is complete we may give the Quinine. This may be given in large doses; in intense cases from 50 to 60 grains a day may be given, whereas in simple intermittents we only give from 4 to 6 grains a day.

When the apyrexia is not complete give the arsenic; this is a revolutionizer of intermittents;

it softens the pulse, corrects the secretions and moistens the skin. In some cases other tonics may be given; the zinc, sulphate of copper, and iron may all be useful in particular forms of the disease. I have seen intermittents which could not be checked by other remedies, cured by the sulphate of copper.

Sometimes it occurs in a low, prostrate and almost bloodless state of the system; in which the tongue, skin and nostrils are pale. After profuse discharges, diarrhoea or hemorrhage a patient may (be exanimated and) present the state called anemia, but in this it is not only a deficiency of blood in the vessels, but a small amount of the red globules compared with the quantity of serum. The serum in these cases predominates over the red particles. The system too is in an irritable state; the nerves have gained a predominance over the blood vessels, and when this is seen the patient is in a distressing state.

In this condition stimulants (~~are injurious~~) and tonics are injurious.

In this state carbonate of iron has been given as a specific for neuralgia. It is not useful on account of any specific virtue in it, but on account of the particular state of the system. It is now found that no matter where the pain with this deficiency of blood is, any oxide will prove serviceable, by yielding oxygen to the blood vivifying and purifying it. The carbonate of iron may be given in doses of from 10 to 20 grains 3 times a day, at the same time allow the patient digestible food, and out door exercise.

When <u>irritability exists</u>, after we have corrected the deranged state of the system, and there remains not too much arterial excitement, we may give narcotics.

When the patient is <u>dyspeptic</u>, by change of diet, air and exercise we can sometimes cure. If the patient lives in town a change may be made to the country, if in the country a change may be made to town.

In this disease by removing all the derangement that exist in the system, we

can cure many cases without an operation; but in some cases we cannot overcome it, the disease remaining an indefinite time in the part. The nerve or its neurilima is then thickened. If irritation exist in the extremity or end of the nerve we operate. This operation although opposed by many has gained ground with all intelligent surgeons; but we are successful in 19 out of cases without an operation.

I will now speak of the cases in which this operation may be performed.

We may operate when the pain is confined to a particular nerve. If the pain skip about from one side to the other, and from one part to another then it arises from a central source of irritation, which is either the spine or brain. If this arises from the spine we then use counter irritation over the spine. When general neuralgia exists I have sometimes found a tenderness upon pressing upon a particular vertebra. Day after day we may press along the whole course of the spine and the patient will complain of no pain unless

pressure be made on that particular spot.

In this condition we can generally cure by rubbing the tartrate of antimony ointment over the point; or some other irritation may be used. If the irritation arise from the head we may create the pustules over the ~~head.~~ mastoid processes or forehead

When we operate ~~we~~ ~~[illegible]~~ the pain must be confined to one nerve, and sometimes after we have cut one nerve we find the pain in another. I cut the palatine nerve in one case, after other remedies had failed, the operation giving immediate relief from the suffering. In about half an hour after the operation the patient returned screaming with pain in the palatine nerve of the opposite side. I have frequently cut nerves giving relief and have afterwards found the pain return. Here probably it is not in a branch or extremity of a nerve but in the main trunk. Whenever we select the right nerve and get behind the source of irritation we always succeed.

Lecture 28th December 17th. 1842

Neuralgia. Continued. We must cut off the nerve between the seat of irritation and the root; if this source of irritation is out of reach, an operation is out of the question. If, for instance, from a spicula of ossification of the dura mater, within the Cranium, we had the bone acting on the 5th pair of nerves, we should have the pain shooting about from one place to another, not being confined to any one filament. If persons come with pain, one day in the jaw, and the next in the forehead, an operation is out of the question. In order to decide on an operation we must have the seat of irritation so situated that we may cut between it and the root of the nerve.

Supra Orbital Nerve.

This nerve comes out along the eye running backwards over the forehead. The pain in this nerve shoots over the eye, back over the forehead and head. This neuralgia is sometimes combined with a hemiplegia. It is sometimes accompanied with a sort of hem-

iplegia described by the patient as a cold spot up-
on some part of the head; others describe it as a
flame applied to the part; some like a nail driven
in through the integuments; hystrical females in partic-
ular often say this. There are a great variety given by
patients; some describing it as a rasping, some as a
nice like pressure on the part.

When we have the pain shooting up to-
wards this hemicranic spot, we have good reason
to infer the operation will afford relief, notwith-
standing the worst condition of the system may exist
at the time. I have operated against the advice of
eminent surgeons on a female, in which case the
disease was of 12 years standing. They objected to the
operation thinking it depended on the deranged con-
dition of the system, she having had, dyspepsia, flu-
or albus, menorrhagia, and rheumatism. In this case
I cut the supra orbital nerve as it come out over
the forehead. I made / not an incision through the
integuments / only a small puncture running the bis-
tory under the skin, cutting the artery and nerve.
The artery retracted and contracted; there being the no

hemorrhage. At the same time that I cut off the nerve I cut off the supply of blood to the part. The operation gave immediate relief; the woman became hearty and strong and the pain never returned.

In cutting this nerve I merely make a puncture through the skin, carry the bistoury over the nerve and draw it along under the skin over the bone severing the nerve. The blood which is thrown out coagulates, keeps the ends of the nerve asunder; the part upon which the nerve is spent, is numbed and the pain is checked. This operation is just as successful as that of making a long incision which is a frightful and bloody one, and taking out a portion of the nerve. In all cases of neuralgia on the scalp I have relieved when I cut between the irritation and the root of the nerve. I have often performed the operation where the pain was not confined to the nerve, as a trial without success, but I would not recommend you to do it.

(This operation of cutting under the integument is called the <u>Morsure sub cutanee</u>)

Sometimes we have neuralgia in this nerve attended with an inflamation and sometimes thickening of the lining membrane of the frontal sinus. Sometimes we have suppuration with a discharge of a greenish, ichorous purulent discharge from the nose.

By removing all the source of irritation in these cases I have cured the neuralgia.

The next nerve, and the one which is thought to be most frequently the seat of the disease, is the continuation of the second branch of the 5th pair of nerves. This branch is the infra orbital, which, after supplying the teeth and other parts of the upper jaw, comes out of the infra orbital hole and supplies the parts at the upper lip and side of the nose. When in this nerve, we have a sharp, stinging, tickling, biting, tittering and shooting pain, which is different from pains in the teeth.

Some to relieve this cut the external branch only which does no good. Then and over again I have relieved patient by operating in the

same way as in the other by the <u>morese sub cutanes</u>. In all cases in which the upper lip is the seat of disease this nerve must (always) be divided. I simply pull up the lip, pass the bistoury up under it on a line with the first bicuspid tooth, and then run the instrument across 3 or 4 times to insure success. If the artery be cut this will retract and contract, and the hemorrhage can always be stopped by slight pressure. When done the parts are numb and we have overcome the pain.

Not only is the seat of disease in the 2nd branch, but most generally the <u>first branch</u> is the seat; the one that supplies the teeth. Inflamation of the "periosteum or substance of the bone or teeth may bring it on. The pain is irregular, sometimes shooting to the eye, sometimes to the back of the head, and sometimes to the base of the skull. By cutting the infra orbital nerve we will fail here.

When in the jaw or teeth we must look at the teeth. Some surgeons say all the diseased teeth must be removed, but this is not the

fact, several may be carious and only one the cause of the disease. It is bad practice to have all the teeth removed. Strike on them with a key or other instrument, and if any one be the cause of the disease a paroxysm will be brought on by it. I have seen sound teeth the cause where decayed teeth existed. I have seen a tooth in one jaw the cause of neuralgia in the others

The strangest case I ever seen was one in which the pain shot through the 2nd and 3rd branches of the 5th. pair. Five teeth, thought to be the cause of the disease were extracted, but these gave no relief. She became pregnant which kept up excitement and exasperated the disease. On looking into the mouth I seen a small spot like an ulcer I touched this with a key which produced a violent paroxysm. I found it was the dens sapientiæ just protruding, looking yellow and diseased. This tooth was extracted during the time of which she had a violent paroxysm, ~~and~~ but she has been well ever since.

The root was found enlarged; no doubt

there was originally inflamation in the root which had produced an enlargement like exostoses, creating irritation which extended to the nerve.

We may have a diseased tooth before it is developed. Whenever you find a tooth in any way elongated or thickened, and if it give rise to a paroxysm when struck, extract it.

In some cases local inflamation, thickening, or exostosis of bone will cause the disease. Whenever you find a carious or necrosed state of the bone always remove it. Introduce into the opening a small quantity of some narcotic to deaden the sensibility of the nerve; this may be done by taking a small quantity of the narcotic, morphia is the best, on a camels hair pencil touching the parts. When this is done allow the part to suppurate, granulate and heal.

In some cases I have found small shot, driven into, and remaining in the flesh, causing the neuralgia. In these cases we must cut out the shot without dividing the nerve.

We cannot operate upon the upper jaw, except it be cutting out a portion of the bone for exostosis or necrosis, but on the lower jaw it is different. If the teeth have been removed, and the neuralgia still remains we may trephine the lower jaw, opposite the hole at which the nerve enters, and take out a piece of the nerve. My operation is easier. I put my finger into the mouth feeling the point of the ramus of the lower jaw where the nerve enters. I carry a bistoury along between the finger and bone, then cut up and down across the nerve. There is always hemorrhage following the operation which ceases if the artery be cut entirely across, and slight compression be made the ends retracting and contracting. I have had experience sufficient to know that this operation is better and not so bloody as the other.

When the affection is confined to the lower lip we operate upon the nerve as it comes out from the jaw bone to supply the lip. I have operated a — this place relieving neuralgia of the lower lip.

Lecture 29th. December 16th 1842

The Portio Dura may be considered as a muscular nerve. It comes from the cranium through the stylo-mastoid hole, penetrates the parotid gland, and divides into 3 branches, 1 going upwards, 1 forwards and another downwards, which are distributed to all the muscles of the face except those of mastication. This nerve has been called by Charles Bell a respiratory nerve, as also the glosso-pharyngeal, par vagum and spinal-accessory nerves. These being considered superadded to the muscular nerves, were called superadded nerves. I have found in cutting the portio dura in the removal of the parotid gland, that he is mistaken and that it is solely a muscular nerve of the face. In removing the parotid gland, which I have done entire 8 times, all the parts have been paralysed and continued paralysed. They have grown short, and returned nothing but slight motion under direct irritation; but they cannot be excited to action by the will.

Many have operated on the portio dura for neuralgia of the face thinking it a sensitive nerve, and

not being followed by success, they have blamed the operation thinking it useless in all cases. Some still firmly believe this the seat of neuralgia, but it is merely a nerve of motion, and not of sensibility, and cannot be the seat of neuralgia. In the removal of the parotid gland I have cut it, handled it and pulled it and no painful sensation was experienced. Many too think the glosso-pharyngeal, portio dura and par vagum are sensitive nerves, but all these are muscular. I have pulled, stretched, pricked and even torn the portio dura, without patients being aware of what I was doing; but when we touch a sensitive nerve the patient (will) will (screak and) scream from the severe and shooting pain. It is true that we find the branches of the portio dura intermingled with those of the 5th pair, running into each other, but why this is so we cannot tell. Surgeons may have been mistaken from this fact, supposing they had a branch of the portio dura and at the same time lie taking with it a branch of the 5th. pair.

The diseases to which this nerve is subject (is subject) do not present the same phenomena that are observed in diseases of sensi

tine nerves. If we have a swelling of the parotid gland, or disease of the jaw-bone, or catarrh or a rheumatic affection causing disease of this nerve, the consequence is, not pain, but the muscles will be paralysed. There are 2 kinds of paralysis in this nerve the same as in the extremities. We may have the atonic paralysis, in which the patient is not able to move the parts; the cheek droops and looks flabby. If we have pressure on this nerve from a tumour or concussion of it from a blow, in many cases we have the atonic palsy; the cheek droops and loses its tone, the palpebral muscle hangs; the patient cannot close the eye tight; if closed at night with his fingers, it will stay shut during the night; he cannot raise or move the lip, all the muscles, depressors and elevators being supplied by this nerve; indeed all the muscles of the face are supplied by it except the temporals, masseter and others of mastication. So with the small muscles of the ear; before the nerve is cut the patient can move them, but after that he cannot.

Whether we have the atonic or neuralgic paralysis of this nerve, it has nothing to do with

[87]

pain and no operation is indicated for it.

In the paralysis which results from blows, we must be aware of inflamation, inasmuch as the atonic may be converted into the neuralgic paralysis. Some have thought strength was required, ~~applying~~ making stimulating applications, and using stimuli internally, to rouse the nerves; but if it arise from catarrh and we treat it in this way, we are apt to set up inflamation in the neurilema of the nerve, and then we shall have the neuralgic rigidity.

When we have the atonic paralysis the muscles have a different action drawing the parts to the opposite side producing a horrible expression of countenance; in the neuralgic paralysis they are carried to the opposite side only in a slight degree

Depletion, alteratives and diaphoretics are required to overcome the neuralgic rigidity.

If the muscles are (stiff) rigid, and unyielding from pressure of a tumour, when we remove the tumour, we have the atonic paralysis; this (is what) results from the operation. The muscular relaxation is not accompanied with distension of the neurilema

ina.

So also with the 9th pair of nerves going to the tongue.

The Spinal accessory of Willis. I am satisfied that from irritating this nerve there is no pain, but by a lessened amount of power of handling the shoulder. When I cut this nerve in removing tumours this is the result; I have cut, pulled, pricked and pinched and no pain was experienced.

And so with the par vagum.

Neuralgia of the Extremities.

These are all supplied by the composite nerves, which are made up by the anterior and posterior roots from the spinal marrow (centre and forming the plexus). These are blended together forming a composite nerve, any irritation at the root affects both. We have rheumatism & gout resulting from irritation to the composite fronts. I have seen cases of irritation of the spinal column, in which if we pinched and handled it, we produced violent pain and spasmodic twitches. In all cases where we have

a composite nerve, we may have spasm, neuralgic rigidity and a painful affection of the nerve.

We often have only one root affected. If only one fasciculus is affected, as in chorea, the patients is not aware of the motions unless he pay attention to them as other persons do. And vice versa, if in the root of sensitive nerve we will have pain only.

In the component nerves going to the extremities we have a separation of these different filaments; the muscular filaments are gradually exausted. In the leg, the sensitive filaments alone remain with the Nerva Saphena, the muscular filaments leaving it in the thigh. In the parts below from thickening of the neurilemma, we may may have a stinging, biting, shooting pain constitutiy a pure neuralgia. So in the muscular spinal nerve reaction following blows, irritation supervening we may have neuralgia in this. This is the way in which we have neuralgia in the extremities; (after the muscular filaments have deserted we have neuralgia of the sensitive extremity of a component nerve.)

In these diseases of the lower and upper extremitys we may give of Veratria, using 6 to 10

grains to ℥ water. 6 to 10 drops 3 times a day. I have found it a very effectual remedy in neuralgia of the extremities and of little use in neuralgia of the Trigeminus. So with Colchicum; we may often succeed in the extremity, are very rarely in the face

After we have given internal remedies, tonics in a weak state, narcotics in an irritable state as stated and have failed, the same operation may be performed upon these as upon the other nerves.

We cut under the chin, along the course where we know the nerve must run, and sever it; it not being necessary to cut out a piece of the nerve as the old surgeons did. The ends will not unite too soon; perhaps not for 2 or 3 years and never completely. It very rarely according to my observation comes back, if the nerve be completely divided, and when it does, it is generally in another nerve.

When we cut out a portion it sometimes unites. I knew a case, in which a portion of the nerve was cut out and the pain returned after 10 years. I cut the nerve again with immediate relief. I have been censured for merely cutting the nerve; but it

will not return for several years and never completely.

Lecture 30th. December 19th 1842.

Diseases of the Sinuses communicating with the cavity of the nostrils.

The Sphenoidal Sinus, lying in the substance of the sphenoid bone, just under the sella tursica, communicates, by an opening about the size of a quill, with the cavity of the nose at the back part, directly opposite to the superior meatus.

Ethmoidal Sinuses. Of these there are 2 orders. The posterior communicates with the upper meatus; the anterior communicates with the middle meatus.

The Maxillary Sinus, in the superior maxillary bone, called Antrum Highmorianum, communicates with the middle meatus of the nose, just under the hanging part of the ethmoid bone.

Frontal Sinuses. These communicate, along with the anterior ethmoidal cells, with the middle meatus.

These sinuses all run into the upper and middle meatus of the nose, and are all alike lined by

one common mucous membrane, which has been called pituitary or Schneidesian. We must look at it, not as a mucous membrane alone, but as a mucous and fibrous membrane, being composed of the common mucous membrane and the periosteum which covers the bones. The fibrous structure is thin, though strong, to give strength to the bones; the mucous membrane is thin covering the whole of the fibrous membrane. Altogether it is to be considered as being composed of fibrous and mucous membrane.

We all know that after sudden vicissitudes of temperature we may have inflamation of this membrane giving rise to what is called a catarrh, which may also take place in the lining membrane of the stomach and bowels, in the vagina of delicate females, and in the urethra as is frequently seen in boys. When we have a catarrh in these parts it is attended with a discharge as in common catarrh affecting the nose.

These diseases of the cavity, which are frequently seen occur in various ways. During the first irritation the parts are dry, the secretion is deficient, the

capillary vessels are contracted. Following this the vessels become extensively engorged, febrile accitement results attended with pain in the forehead. In a short period, if the excitement has not been moderated, or if the patient has used stimulants, the first mode of relief is a watery discharge which continues to drain and dribble away. Frequently large quantities of this, when the patient lays down, will, from gravity, collect in and fill up some of the sinuses; if the patient then gets up this will be suddenly discharged and come away giving sudden relief. If the sinuses of one side are filled, by turning to the other it will run out; if the frontal sinus be filled while laying down, it will run out upon getting up.

Nothing is required, for the treatment of this state but gentle remedies, as the vessels relieve themselves by their abundant discharge.

If the inflamation be not mitigated, it may go on to produce a <u>thickened state of the membrane</u>, attended with a viscid and tough discharge. This discharge being thick, may close the ducts and be retained in the cavity of the sinuses, creating a great deal of irritation

of the mucous membrane lining them (sinus). We may then be convinced that there is an abscess (in the sinus), by the pain in the part with fulness, and by the puffiness and erysipelatous blush of the outer integument.

If not still overcome, the parts will ulcerate, the mucous membrane will be detached from the bone, and the bone will become carious; the part will continue to ulcerate and finally discharge externally leaving an ugly cicatrix and a horrible deformity. If this occurs in scrophulous persons, & the bone becomes carious, the discharge may continue for months or even years.

When you have the threatening symptoms of (the conversion of the part into) an abscess use active antiphlogistics; bleeding, low diet, laxatives and a low temperature (are required).

When the irritation has been overcome, we must restore the passages leading from the sinuses; to do this we take a probe and pass it into them, which may be done very easily in the whole of them. If a probe cannot be introduced a syringe may be used; this may be placed in the middle meatus of the

nose and warm water thrown strongly up from it washing out the parts. A solution of the chloride of lime or soda may be added to water; but in my hands I prefer the warm water alone, by which the obstructions can be washed out. By this treatment, with leeches externally, and covering the part with an emollient poultice of slippery elm, we generally get along without an operation.

It is only in intense cases where we know caries of the bone exists that we operate upon the frontal sinus. ~~and~~ (~~Where we perceive a fluctuation under the parts~~) To open the sinus a perforator or a common gimlet may be used, boring with the instrument into it and then washing out the cavity with the syringe. If the caries is not in a scrophulous person it will be overcome and there will be nothing left but a scar.

Maxillary Sinus. All surgeons have preferred freeing out one of the large grinders for the purpose of perforating this cavity. The 2nd or 3rd from the back is taken in preference to the dens sapientiæ, and of these the 2nd is prefered to the third, using for the

purpose of entering the cavity a perforator. The opening should be not a small one, but one of good size, that the contents may be let out through it.

Eustachian Tube. Inflamation may arise in the cavity of the ear; from which we may have an abscess; this may be followed by ulceration of the tympanum and a discharge of the contents externally. If in scrophulous persons, with it, the bones are very apt to be carious. If it take place in the lining of the Eustachian tube or middle ear, patients are liable to have the hearing in a great measure injured or entirely destroyed.

In all cases where there is ear ach with throbbing and obstruction in the Eustachian tube use depletion; the tonsils may be scarified or enlarged even removed and bleeding favoured with gargles of warm water; and the Eustachian tube may be opened. This may be done from the nose or throat. If from the throat push up the soft palate and the opening can be seen; into which introduce a syringe and throw up warm water. By this we may wash out the cavity, relieve the irritation and permit the discharge through it.

Mastoid cells. These are lined by the same membrane that lines the other cavities, and in these, as in the others we may have inflamation, thickening of the membrane, or an abscess with an accumulation of matter producing swelling of the external parts, the bone (of this) too is liable to be absorbed. These parts by a closure of the Eustachian tube may ulcerate through. I have frequently seen persons with ugly cicatrices from ulceration through the integuments, from abscesses of these cells.

The operation of boring into these cells was recommended by the old surgeons, but I believe this never need be performed if active depletion be used.

To relieve the consequences of affections of the ear, as an abscess in the middle cavity, followed by ulceration of the tympanum and a discharge from the ear, we must resort to alteratives with blisters behind the ear. To correct the discharge injections may be used, of a solution of the chlorides of lime or soda, 1 part of water to 3 of the chloride, throwing it up with a syr-

inge. Every 3 or 4 days a solution of the nitrate of silver, 15 or 20 grains to the ounce, may be dropped into the ear. This must reach the very bottom, where by acting on the surface, it will correct the discharge and cicatrize the parts. I sometimes use the citrine ointment with kreosote. By these applications, if the bone be carious it may be stimulated, granulate and cicatrize.

Lecture 31st. December 26th 1842

Polypi. Polypi are not confined to the mucous membrane of the throat, but are found in all the passages that have a common outlet, as in the uterus, vagina, and sometimes, though rarely in the intestinal tube.

Inflamation of the mucous membrane of the nose, as stated, is first seen with dryness, a sense of weight, fullness and rigidity. If high stimulation is avoided in this state, the vessels give way, and the inflamation is attended with a thin, serous or mucous discharge; or in the latter stage suppuration with a purulent discharge by which the vessels are relieved

and the inflamation overcome. Sometimes, as John Hunter has clearly shown, there can be no doubt, we may have sound pus from a mucous membrane. This takes place in ordinary inflamation of this mucous membrane; but if we have an exaltted degree of inflamation, the vessels, instead of relieving themselves by a discharge will throw out lymph constituting the dry or adhaesive stage. The mucous membrane and sub mucous cellular texture become thickened from the effusion of lymph; the mucous membrane is thrown out by the lymph, into which lymph vessels shoot forming a polypus. Mucous membranes require a high degree of inflamation, but fibrous and serous membranes will unite by adhesion from a low degree of inflamation. Mucous membranes ordinarily from inflamation do not adhere which is a wise provision in nature, as by it, the natural passages which should be kept open, would be obstructed; indeed adhesion is the last thing which occurs in them, and is only the result of an excess or high form of inflamation.

It is in this way that polypi occur the inflamation terminating in the dry or adhe-

ive state instead of the suppurative. The mucous membrane becomes thick and loaded with lymph, into which vessels shoot, organizing it; yet it is possessed of only a low degree of vital power, the membrane resembling the white of an oyster instead of the red and injected appearance natural to the nose.

We sometimes have these polypi in the throat. After giving this lymph is sometimes exsaled. The patient upon rising in the morning will find himself almost suffocated, and if we look into the throat we shall see it perhaps like a large oyster. The lymph is now merely exsaled on the surface, but if left be for a short time vessels will be seen shooting into it, and if left for several days it will be a polypus.

By active blood letting, and the application of stimulating lotions we may destroy the union of this lymph. By active blood letting, purgatives, and antimonials to produce relaxation, we may speedily overcome the inflamation, cause exfoliation of the lymph and in this way get rid of it. If let be for some time it will have to be cut away

or destroyed by caries.

When in the nose, polypus generally results from several catarrhs or from blows effecting the membrane causing inflamation which is not relieved by depletion; the patient passes into hot and cold air, uses stimulating food, and, as is customary in cases of colds for the purpose of driving it out, uses stimulating drinks. Adhesive inflamation is excited, lymph is effused which becomes organized, increases in size growing down to the middle meatus and finally the lower meatus of the nose, and from its size obstructing respiration. We then have what has been called by writers the nasal sound, but which is in fact a want of the natural nasal vibrations and resonance. We are not generally consulted until it is in this last stage protruding down behind the throat where it is seen like a large oyster, or as is generally the case, coming front filling up the nose.

The general plan is to seize hold of, twist and pull these out with a forceps, by which we are liable to get hold of and pull the spongy bones. They then generally use stimulating applic

cations.

By the use of Sulphate of Copper, Lunar Caustic or Iodine we may sometimes destroy the vitality of the part and cause a slough. If there be inflamation and fulness it is our duty to cure this.

I put the patient upon low diet, regulate the bowels and use styptic injections into the nose of borase or sulphate of Zinc. Having done this I proceed to destroy the polypus. When about to remove it I examine the place and from which meatus it comes. I pass up a blunt scissors, get hold off and pull it down a little; I find the attachment and with a blunt pointed bistoury I cut it away. I then burn the point of attachment with caustic, or inject a solution of it into the nose every 3 or 4 days. By this treatment it never returns.

When the attachment cannot be got at I pull at the tumour getting away as much as possible, but avoid bringing along the bones. I then inject styptics, borase or Sulphate of iron and then use caustics, The lunar caustic may be used 10 to 20 grains to an ounce of water.

When I cannot get at the polypus with the forceps I introduce a double canula. I run a wire through the tubes drawing it up to a small loop; then pass it up to the front of the tumour and push out the wire enlarging the noose. Then direct the patient to blow the nose; by this the tumour will be forced down by the air, and the noose may then be drawn being slipped around it. Having caught hold of it we pull and twist a little, and frequently by this get away a large mass. Whenever high up or far back this is the best plan to remove them.

Another way of removing it when the polypus is far back, is by means of Locks canula which consists of a watch-spring instead of a wire. The spring with a hole in the end is held in the single canula, which is passed down the inferior part of the nostril, back into the throat behind the soft palate where it is seen. We pass a string through the hole in the wire, having attached to it a wad or plug of lint or sponge sufficient to fill the posterior nares. We then pull this plug forward against the polypus which can be seen as we draw

protruding and by continuing we generally remove it entirely. By this I have frequently succeeded in removing large polypi.

There is no need of a canula for removing them in this way; a common round iron wire doubled, may be passed along the inferior meatus, and may be seen projecting into the throat, to which the plug may be tied and drawn through and the tumour removed.

The same thing does for tremendous hemorrhages from the nose. With the use of tartrate of antimony, blisters to the back of the neck and cold applications to the head with the plugs in the back of the nostrils and others in front we generally succeed after other means have not. After I have introduced them for hemorrhage I place my finger far back in the mouth and force the plug front and by these means have always succeeded.

The polypi mentioned are not the only ones met with in the nose. We sometimes have the <u>malignant and fungus</u> kind though very rarely.

These vascular or fungus tumours grow

ing in the nose generally contain spicular of bone. They are fleshy, vascular irritable and liable to bleed and produce tumefaction and irritation of the external parts.

The tumours may be cut away in most cases, like the former and to excise them is very easy. We cut away away the whole mass with the attachment, which is sometimes bone. There almost always according to my experience come from some of the sinuses.

Being almost always seen in scrophulous or leuco-phlegmatic temperament, it is 10 to 1 but the disease will return.

Lecture 32nd. December 21st, 1842.

Distortion of the septum of the nose may be mistaken for polypus. This septum is lined by the common mucous membrane from chronic inflamation in which, occasioning no sensibility, we may have hypertrophy; from this increase in size we have a distortion, sometimes to one side pressing on that side. This increased thickness sometimes looks like a warty structure. Sometimes there is an increase on one side

only, and sometimes on both sides. The side which is increased in thickness becomes obliterated, the patient breathing through the opposite; the speech is affected with a bad nasal sound; there is commonly irritation on the dilated side and dryness from the passage of air through it; the whole head is affected with gravedo; the patient cannot hold the head down unless he be affected with giddyness and great determination of blood to it.

To relieve this I cut away the distorted and thickened portions. I open the nostril by pulling the alae nasi to one side and then pass in a blunt bistoury, (with a sharp pointed one there is danger of cutting the opposite side) run it through the septum on one side of the distorted portion and then cut around it, taking it out. The bleeding which follows relieves the irritation and all the vascular engorgement. The edges may then be touched with caustic. By this operation the external distortion of the nose disappears, and we have not only cured the disease but also the deformity. This hypertrophy in the septum always causes distortion of the nose, and the operation is a very efficient and

perfect one.

Eustachian tube. In introducing a syringe into the Eustachian tube, we take one with a long point. We make a slight curve in the point, enter the nose with it keeping the concavity externally and the convexity to the opposite side. We pass the tube back keeping the point directly opposed to the external wall of the inferior meatus until it enters the tube; the only danger lies in its being carried too far back. Obstruction can be overcome by the passage of the tube nearly as high as the ear; to overcome obstruction in the balance of the tube a stream of water must be thrown up. This should not be thrown up in large quantities at a time, but only a little spirt, then intermitting for a short time and throwing up again. If it enters there will be a roaring sound in the ear; if it has been forced down and entered the larynx the patient will gag and cough.

Diseases of the Tonsils. These two bodies called Amygdala or tonsils are situated over the cornu of the Os Hyoides in the fit between the soft arches of the palate.

These become enlarged from a variety of causes. After catarrh, from repeated attacks of inflamation, they are sometimes left inflamed, vascular and irritable bodies. We ~~perceive~~ meet in persons who have had the secondary or papillary form of venereal in which the joints and bursæ mucosæ are affected, repeated attacks of inflamation of the throat, which produces an enlargement of these bodies unattended with ulceration.

In this ~~case~~ condition where inflamation exists in them an operation would be wrong, ~~and~~ from it we would have a profuse hemorrhage. (According to my observation in this state there is no use of an operation.)

General treatment must be resorted to; antiphlogistics low diet &c; incisions may be made into the tumour and bleeding promoted from it by gargles of warm water in which way sometimes 2 to 6 ounces may be drawn. gargles should be used of an astringent nature, as sage tea and honey or borax, 3 or 4 times every day; the surface should be touched with caustic every 2 or 3 mornings. When the inflamation has been overcome by constitutional means the operation may then be done.

When from inflamation in a scroph-

ulous habit, we observe an oily, pulpy indolent tumour, it is in a state of degeneration. The ducts are obliterated; a pale, granular substance stands out which keeps up irritation in the throat and causes a difficulty of breathing and rattling at night.

In such cases if inflamation be present it may be first reduced and then the operation performed.

(The ancient plan of removing these was strangulating them with a wire in a cannula. The noose is carried around the tumour which is seized by it; if it cannot be seized it is put on with a forceps; the wire is then drawn and the tumour entirely destroyed. This should not be drawn gradually as was the old plan but it should be destroyed at once. The wire may be drawn as firmly as possible, also in all other tumours which are destroyed by the ligature, and left to remain on for a little while 1 - 3 - or 4 hours, or in some cases 6 to 10 hours and then taken off when the tumour will slough. When this has been done I sometimes cut it off with a scissors, but this is not often required as it will soon slough.

If we were to cut these off when redness and vascularity existed, there would be great danger of inflammation and swelling.

The way in which we now operate in 9 cases out of 10 is to take hold of the tumour with a common hook as is seen in the chiseeting, drag it back into the throat and then with a common bistoury cut it off. (some use scissors, but with these it cannot be removed if broad at the base. By the bistoury we can cut off the whole or any portion of it.)

When there are diseased, and there is a secretion of purulent matter we only want to cut off a portion. I then run the probe through the holes in the tonsil and cut through the part above it. which allows a free discharge of the matter.

Sometimes we have a foreign body in it which keeps up the irritation, in which case there is a continual sticking and pricking sensation in the part. Sometimes this is some portion of the food, a fish bone or the like; I once seen in it the bristle of a tooth brush.

These foreign bodies must be removed.

In many cases by cleansing out and discharging

the ducts we may cure without removing the whole tonsils.

Instruments of various kinds have been invented for removing these. Dr Fahnestock of Lancaster has patented an ingenious instrument for this purpose, but one instrument will only do for one size; it will require if we use it, 3 or 4 of different sizes to be kept and as they are very costly I would advise you to make use of the common bistoury.

Diseases of the Soft Palate.

We sometimes meet with a narrow, filiform dilatation and slender palate. This is merely a relaxation of the (lining) membrane which projects beyond the proper substance of the palate. At night it is liable to produce cough and symptoms of strangulation from getting into the top of the larynx.

Chronic Hypertrophy of the whole palate is sometimes met with. If we examine it we will find the increase in thickness cannot be got off; it is not filiform but only enlarged which depends on a low degree of inflamation. In this there is a falling down of the palate.

For the cure of this use depletion and styptic

gargles.

Polypus growth on the surface of the uvula, from effusion of lymph are sometimes seen, which when large produce obstruction to respiration. Of all these the treatment is very simple. Take hold of it with a blunt scissors and pull down the uvula, not catching it at the tip or skin only, as by cutting only the tip we may leave a raw and irritated surface from retraction of the lining membrane, but catch hold of the palate, taking a firm hold and cut it across leaving only a nipple like projection of 1/4 or 1/8 of an inch in length; it is better in this case to remove too much almost always than too little.

I never knew bleeding follow only in one case in which I took up the artery with a ligature running it along the forceps and tieing the double knot. If when the tonsils bleed, we may introduce a common hook, (with) which we hook up the bleeding surface, carrying a ligature down and around it. It is never necessary to use hot irons

Ranula. This is an encysted tumour like a vesicle the sac containing an inspissated fluid, and generally the salivary fluid, situated in the mouth or throat; in books they are given as being found under the tongue but this is not the only place I have seen them as frequently on the lips as under the tongue the fluid collecting which ought to be discharged, from obstruction in the mucipersous ducts, reaching generally the size of a hazelnut. There are sometimes found on the tongue from obstruction in the lingual ducts sometimes the size of a pea or partridge egg. In one case I saw a large ranula on the inside of the cheek from obstruction of the Sthenonian duct.

In all cases it is proper to excise all the prominence of the tumour. Pass a hook into it and with a bistoury or scissors remove it opening the sac. Wait a day or two, then touch with a stick of caustic, by which it will be stimulated to contract and cicatrize perfectly and the disease is overcome. If there be too much fluid in, as it is inspissated like the white of an egg, wash it out.

Some remove the prominence all around, but it is

only necessary to cut off the tip or puncture it.

Lecture 33rd December 22nd 1842

I omited to mention in speaking of Ranula, the deposite which is sometimes seen, and which is in reality a calculous deposite, in some of the ducts of the salivary tubes; and sometimes in the tubes of the tonsils, and which ~~are~~ is the result of a secretion in the tubes from inflamation, attended with a deposite of phosphate of lime, mixed perhaps with small quantities of Carbonate of lime and ammonia. The bladder has not only calculi coming from the ureters, but also calculi formed in it from a morbid secretion of its coats forming the phosphatic calculi. From chronic inflamation the coats throw out a gelatinous or muco-purulent matter and the material of stone is secreted by the coats, and is not a deposite of sediment as said by some. So in the mouth we often see tartar upon the teeth, which is not food but a secretion, (~~from the gums from chronic inflamation~~) of the phosphate of lime.

This deposite is found in the excretent ducts and the duct of Wharton, leading from the submaxillary

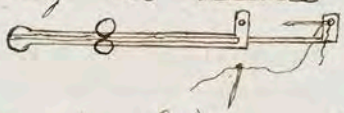
lary gland is especially liable to chronic inflamation and the secretion of this phosphate of lime. The next most frequent duct is the duct of Steno; and sometimes they are met with in the labial glands. The fluid being discharged from the duct of Wharton against gravity, allows this deposite to remain.

Sometimes persons after being relieved have a return of this disease, but whenever I have laid open the canal extensively, and cauterized it there has been no return.

Imperfect Palate. In the bony palate we sometimes have deficiencies the bones of each side, as I have seen remaining separate with the lip, lining membrane, and azygos uvulae muscle, which muscle, though considered single is a double muscle. Sometimes these deficiencies in the bony palate are only partial.

Soft Palate imperfect. The best way to operate for this is to use a common pair of forceps, and a common curved needle with a ligature. We pare the two edges with a bistoury; we seize the one side at its lower and back part with a pair of forceps, carry the bis-

trusy up a little above the angle, making it with the two cuts acute, and pair the edge down; and so with the other edge. Having done this we take a small curved needle with the fingers or forceps, carry it through both sides of the palate, pull it out and leave the ligature which may be tied by the double or surgeons knot. In young children it would be difficult to introduce the needle with the fingers, as these would fill the mouth which is small. In them we have an instrument for sticking the needle through the palate. We put 2 short,



spear head needles, one on each end of a string, introduce 1 needle into the male blade of the instrument which is carried behind the palate. This blade is drawn with the needle in it, which passes through the palate, the needle entering the hole in the female blade which it completely fits. The needle is now in the palate, and the male blade is pushed back leaving it fast in the female blade, by which it is drawn through with the ligature. The needle on the other end of the ligature is introduced and carried through the other side in the same manner. We then have the two sides of the palate

threaded and all that is necessary is to tie them together with the double knot, which may be done by passing the index fingers along the thread into the throat.

Two of these threads are sufficient for any palate. These may be left for 4 or 5 days, which time is amply sufficient; we may then carefully insinuate the point of a scissors under and remove them.

There is no difficulty in cutting the edges of the palate for this operation; and when cut they will unite better than the hare-lip. So in holes or ulcerations through the soft palate, we may pare the edges, and bring them together. So in recto-vaginal fistulæ, I have cut the edges and introduced needles with ligatures in this way keeping the edges together. I have found it a very useful instrument in all deep cavities.

In the separation of the hard palate, after the hare lip and soft palate have united this plan may be used. If this separation be broad, running as I have seen it along the whole course of the bones, it never can completely close; only when small. The voice always remains always remains harsh and nasal.

We afford relief in this condition by making

an artificial palate. Take a gold plate, as thin as it can be for the purpose and sufficiently large to cover the part, having a hole in, or what I prefer a hook soldered on the centre of the upper surface. Then tie a sponge to the hook; thrust the small sponge through the opening in the bony palate. By the moisture the sponge will expand and fasten the plate against the palate. This will close the opening and no food or air will get through it. This may be used where there is an ulceration through the palate from venereal or other cause. Slight traction against the palate is sufficient. The plate need be removed only every 4 or 5 days to clean it and put in a new sponge.

Sometimes in consequence of the opening we must use a plate of gold having a pair of legs going down on each side one to be attached between the teeth. These  fit in the interspaces between the teeth at the roots. Two legs may be used when we wish to have the support of 2 teeth. By this it is held permanently. This is called the gold obturator; some advantage may be gained by letting it project back a little to oppose the motions of the tongue.

Mechanical Operation for affections of the Oesophagus.

Stricture. These I will divide into 2 kinds the spasmodic and the permanent.

Hysterical females are particularly liable to a spasmodic stricture of the oesophagus. There is globus hystericus; a sense of swelling and rising in the oesophagus, generally about the situation of the thyroid gland, there is a sense of choking an obstacle to deglutition.

I have found spasmodic stricture from contraction of the circular muscular fibres of the oesophagus, generally about the middle or lower part of the neck. When the patient throws up wind or food it produces violent pain from lodging in and not passing higher than the strictured part.

For all spasmodic strictures regulate the diet and give tonics, and particularly relieve (the) spinal irritation, by the use of tartrate of antimony ointment or some other irritant to the back of the neck. This with a few introductions of the stomach tube will overcome it.

Permanent stricture.

Of this there are two kinds. I have had 2 cases in which the stricture was owing to a gressly

substance, the result of adhesive inflammation, which I never could overcome, but in all others I have given relief by the use of lunar caustic and bougies.

Stricture is generally attended with a dry and contracted state state of the mucous membrane, a dry state of the fauces and top of the larynx; we will find a bougie will pass the part with great difficulty and it is almost always attended with diphtheritis; which, if not overcome the stricture cannot be overcome.

I insert a piece of caustic in a bougie, which will speedily detach this diphtheritis, when the natural secretion will be restored and the irritation overcome. Four or five grains generally are sufficient, and should be rubbed up and down the tube and then washed down with warm water.

Sometimes ~~obstinate~~ constipation attends this stricture, which, by introducing the caustic, overcoming the irritation and restoring the secretion will be be cured and the bowels be opened.

The caustic may be introduced once every week. I have seen this diphtheritis in the mouth, anus and urethra, all these being covered with the white crust.

It appears to be a morbid secretion in all the mucous membranes. In the form of stricture attended with this diphtheritis we generally have to reapply the caustic every 3 or 4 years.

Introduce a bougie, small at first, and gradually larger, and it will cause absorption of the grisly substance, occasionally using the caustic on a catheter. I knew one case where the bougie had to be introduced every month for several years.

Lecture 34th.

Obstructions of the Oesophagus and Air passages

Foreign bodies. The idea of foreign bodies always being in the air passages when death is produced by them, is a mistaken one. When lodged in the pharynx they are liable to excite spasmodic contraction of the larynx. A large piece of meat or other substance, particularly at the time a person is laughing or talking, may lodge in the pharynx just behind the larynx; it cannot produce death from absolute suffocation, but from irritation communicated to the larynx. When there is cough and symptoms of suffocation we must not always think the body is in the larynx, for in cases where it

is lodged in the lower part of the pharynx there may be suffocation produced.

Some have made incisions ~~into~~ the side of the trachea for the purpose of removing these, but it is rarely necessary, as we can generally get them out with instruments.

Some use the probang which is a small sponge on a stick, which dilates the <u>oesophagus</u> and pushes the foreign body down, if it be soft or dough like or such as can pass. If sharp bodies or hard or angular, if this be got aside we can sometimes pull them up. When soft articles of food are lodged in the oesophagus this is a safe and effectual instrument; but if we thrust the finger into the throat and make the patient gag these are generally dislodged. I would advise you to avoid using the probang at first, as we can generally get them out with the use of the fingers and forceps.

I believe in almost all cases the body will be found in sight particularly if it be small. First examine the parts in sight and if the body can be seen pick it out with the finger or forceps; if at night and the light of a candle is not sufficient, we

must depend on feeling. In this I would caution you against mistaking the prominences or appendices of the Os Hyoides for a foreign body, for feeling these, and applying a forceps we may lacerate the parts. These being covered with the common mucous membrane, being soft and smooth we will distinguish them from sharp, rough or angular bodies; by knowing the anatomy of these parts, we also know the natural prominences.

After we have carried the finger down and felt through the pharynx, if not found we may feel the larynx, which will make the patient retch violently and by this perhaps bring up the body; never mind the retching or gagging as no harm will result from it, and by repeated efforts, it may bring up the foreign body. In several cases I have succeeded in getting the body up by holding my finger there. — When in for any length of time, a half hour or more, there is a secretion of a tough, gelatinous substance surrounding it.

If we have found the situation and fail in extracting it with the finger we can then introduce a forceps and remove it.

If we fail in finding the foreign bo-

dy we must never force it down immediately. We then use the crane bill forceps with which we can pull them out when very far down. From the construction of this forceps there is no danger of taking hold on the mucous membrane, and from its serrated edges the smallest bodies may be seized. Pins or substances of the kind when seized and drawn, turns in the groove formed by a union of the two blades of the forceps, from which there is no danger of forcing them into the walls of the oesophagus.

When all these means have failed I pass down a stomach tube, giving drinks of flaxseed tea or barley water. Whenever patients complain of pain and difficulty of deglutition I always prefer using the stomach tube.

When we have failed with the stomach tube and not until then, I would recommend the use of the probang. I have known patients injured by carrying this into the oesophagus with a dry and hard sponge. I never think of using it only when a bone the body is lodged far down, and then the sponge must be wet and sufficiently soft not to force the

body if a pointed one through the coats of the oesopagus. Many instruments have been recommended, but the only one deserving any attention, is that of a mass of threads which is sometimes useful when small bodies are lodged.

When fish hooks are fast in the oesopagus, as sometimes happens, with a string attached, we may slide a bullet with a hole in down the string.

Lecture 35th January 3rd 1843.

Foreign bodies in the respiratory tube.

In all cases of foreign bodies in the respiratory tube, we must always combat the existing symptoms before operating to remove it. The existence of foreign bodies in the tube is always a doubtful point. I have seen cases in which the spasmodic cough and difficult respiration existed, and in which I had been told the children had been playing with peas, beans and the like; by depletory treatment and the use of demulcents these have gone off, showing them to be cases of inflamation only of these parts. The existence of a foreign body in the respiratory tube is always doubtful.

It is the common opinion that when the body is lodged on the glottis or small chink of the glottis that the person cannot articulate; but I have known cases in which the body was in the trachea, and in which there was an inability to articulate. Another thing which surgeons are ignorant of is that the bronchial tubes do not go off laterally but form an acute angle, the plate between the two being called the palate of the lungs. Supposing these ran off laterally they thought a floor was formed on which the foreign bodies rested, and that it was thrown up at every respiration and then fell down again, but never entered the bronchial tube. But the foreign body may go down into these tubes out of reach of the forceps; therefore in introducing the forceps and seizing a body we must avoid using force in pulling as the palate of the lungs may be seized and torn, while the foreign body is in the tube below.

Foreign bodies may remain in these passages for an indefinite time without their existence being suspected. I knew a case in which a cherry stone lodged in the left bronchus; by proper deplection,

the use of expectorants and demulcents, the existing symptoms were overcome. His body remained in the air passage for seven years, when the symptoms returned and were then attributed to a cold. Under the treatment the patient became weak and prostrate, in which state during a fit of coughing he threw up the cherry stone covered with a calcareous deposit of phosphate of lime. The body became large from the deposits produced ulceration and the hemorrhage with which the patient had suffered. Foreign bodies may remain in these passages through life. If they get come inflamed from any cause being more irritable in this state, these bodies may then cause suppuration, become loose, and in a fit of coughing be thrown up. If the glottis be in a relaxed condition it may be thrown entirely out through the natural passages but if firm during the cough it will be thrown up and then fall down again.

By relaxing this part by bleeding the foreign body may be thrown out by the cough. I have over and over again seen patients relieved by the use of evacuant and expectorant remedies. We should attack the pathological

condition of the system and not the cause of the disease. I never knew a case where there were neglected in which the operation for the relief of the patient had not to be performed. The symptoms should be treated as if they arose from a common catarrhal affection of these parts, by proper depletion & the use of expectorants and demulcent drinks. The operation is always an uncertain one as we are never sure of the existence of a foreign body in the passage: even in adults, where they have felt the body slip down an uncertainty exists. We are only certain when we can lay the finger upon, or see it in the trachea. After we have overcome the inflammation and constriction in the tube by proper depletion, if there be an increase of the symptoms we may then be compelled to operate: we should then always state to the friends that by it we may only afford relief for a short time. By making the incision in the operation we always take off the spasm of the glottis, the muscles become completely relaxed, and the patient gets better. In inflamations of the glottis and fauces this operation is sometimes performed to procure a palliation and respite from the use

gent symptoms. By the relaxation which is produced we allow the body to be blown out by the air in respiration. They are frequently blown out when a free volume of air passes through the tube. Sometimes by cutting into the windpipe in the operation, from the relaxation produced in the glottis, the foreign body comes out through the natural passage. In this case surgeons are not to be censured for operating, for if this had not been produced the foreign body would have remained. In 4 out of 5 cases I believe the body will be thrown through the natural passage.

Lecture 36th. January 10th 1843.

Tumours of the Gums & Jaws. — Epulis. This is the result of chronic inflamation in the gums arising from a defect in the teeth, or a disease of the alveoli. The sore presents a rigid, angry and frequently a bleeding surface

I remove this by cutting away the teeth & alveolar processes with the gum. This should be done with a strong, well tempered scalpel, cutting with it to the bone, which in this diseased state, is

softer than in the healthy state. If it cannot be removed with a scalpel a saw may be used. After it has been removed the cavity may be touched with caustic. I generally take the caustic potash and quicklime to promote healthy granulations. When the cavity has suppurated if I see any points which are not sound I destroy these (again) with the caustic. When the granulations are healthy I treat them with lunar caustic and powdered alum.

When the bone is involved the diseased appearance is similar but in disease of the bone it is larger. Sometimes we have absorption of or a softening of the bone a fungus substance occupying the place, constituting the Osteo Sarcoma. There might be mistakes but Epulis is only a disease of the gums and alveoli, and in this the bone is involved.

When in the <u>antrum Highmorianum</u> the bones project (out) under the skin, the face is swollen and there is a general tumefaction, the cavity of the nose is impeded; the tumour projects into the nose from which there is frequently hemorrhage

if we look in we find the roof of the mouth invaded being convex and not as in the natural state concave; in the bones the alveolar, nasal and cheek aspects are all absorbed

The way to remove this is by the horrible operation of demolishing the walls of the antrum. Some, for this purpose, use the chisel and mallet which is unnecessary. If the teeth are remaining I extract them and then run into the cavity in 2 or 3 places a perforator. These may be enlarged to any extent necessary. I then break away as much as I can with an elevator, introduced into the openings. I then can further cut it away with a saw, so that I can take out the fungus. Having done this I can then take away any parts that look suspicious. In this operation there is not much hemorrhage; as it come from the maxillary artery only it can always be checked. It is not as painful nor as horrible as the other. There is little pain until we cut the maxillary nerve, when the patients shriek; this is generally surrounded with the other parts and from this there is seldom any pain.

~~(If this disease be left though slow in)~~

If this disease be left though slow in its progress it is always sure to destroy life; but by an operation removing the diseased parts, life may be prolonged for many weeks or even years. I removed these parts in a patient in 1824 and last year I saw the man; the disease had never returned. In another case I removed the disease by dissecting out the fibro mucous membrane lining the cavity; the patient remained well for 3 years when it returned; not in the jaw however, but in the ancle.

When I remove all the bone I make an incision from the commissure of the lip up to the malar bone, throw back the 2 flaps so as to expose the cheeks. Having removed the disease I fill the cavity with dry lint and bring the lips together by means of the interrupted suture. When suppuration takes place I withdraw the lint. If it does not look well I stimulate the parts with lunar caustic or alum. When the parts have cicatrized, which they sometimes do ~~not~~ in 3 or 4 months I they consider the case well and not until then. The disease generally returns, but by the operation life may be prolonged for several

month or even years.

The same operation for the same disease, Osteo Sarcoma, resulting from a morbid nutrition originally in the fibrous membrane covering the bone, that is performed on the upper jaw may be performed on the lower jaw. The incision may be carried from the commissure of the lip on one side down to the throat taking up the small arteries which are cut, then on the other side. The masseter muscle may then be cut off the bone turned out, and then dissected from the tongue. By this the lingual arteries will be cut which may be tied. There is no necessity for taking up the carotid artery. The flaps may then be brought together by stitches and adhesive plaster. Granulations will shoot up and the parts heal leaving very little deformity. In one case in which I removed this bone for a true osteo sarcoma, the patient remained well for 11 months at which time the disease returned. The branches of the carotid, which are cut, may be taken up. It is almost always only necessary to take up the facial artery.

Cancer of the lip. This generally arises from pimples, warts or scabs on the lip, which, being picked and pulled of from time to time, become of a scirrous hardness around perhaps; sometimes the part ulcerates shooting up fungus granulations; sometimes we have a hard, rigid kind of chronic ulcer of the lip. This is attended with a stinging, pricking pain, called frequently lancinating from the feeling, described as if a lance were run through it.

Escharotics only exasperate this disease. It must be removed with the knife. When the disease does not extend to the glands the operation is a simple one. It is performed by merely paring away the cancer. Surgeons generally, cut this away with a scalpel or scissors but I generally use a histoury. I have each side of the lip pressed by an assistant to keep it firm, and prevent hemorrhage from the coronary arteries, then run the histoury through it, cut out on one side, then on the other, making it half-moon or crescentic shape. I then use a dry dressing sprinkling the surface with flour. When suppuration takes place, and this dry scab

of flow is thrown off I then apply a cerate. If any parts look unhealthy I touch them with Caustic. By this the skin will run up and the mucous membrane down and the parts be cicatrized over. When the glands are not affected this is the best method of removing it.

The old plan was to cut down on each side of the Cancer, making the letter V with the 2 incisions, then to bring the edges together to unite by the first intention. By this plan the lip looks very well but from the force required to keep the edges together the operation is a severe one. As stitches are used these keep up irritation and by this cause a return of the disease.

Lecture 37th. January 5th 1843.

Morbid Growth. There are morbid growths, not only in and on the bones but on other parts of the body. In the bones there is a difference in the 2 names given to the morbid growth, but there is no difference in the character of the disease. These are formed by a chronic inflamation in the fibrous covering of the bones. A growth of a cartilaginous fleshy substance with chord like white lines running into it, takes place around the bone and by its pressure produces absorption, an ulceration or wasting of the bone. This is the way in which they originate. They have been confounded with almost every disease. The spina ventosa has been confounded with Osteo sarcoma, and osteo sarcoma with spina ventosa.

The one disease causing a wasting or perishing of the bone they call, they call Osteo sarcoma. Spina ventosa is a disease in the cancellated structure of the bone enlarging the outer structure. Some have confined this to the lower jaw and fingers. This / in scrofulous habit it is generally met with, / after suppuration, exfoliation of the bone and a discharge may be restored but a fleshy growth in any bone, filling the cancel

li with a medullary, soft reddish matter I call spina ventosa. The bones lie of a cancellated spongy structure looking as if blown up by wind, the interstices being filled with medullary matter. This disease will ulcerate, produce constitutional irritation, a colliquative discharge and carry off the patient. It occurs in bad cachectic habits. There are diseases in the jaw bone which are not malignant, but medullary matter secreted from a morbid nutrition in the interstices of any part I call malignant.

A great many deposites of this matter resulting from the primary process of digestion, the blood becoming depraved from ~~this~~ unsound matter of nutrition take place not in nor on a bone but in other parts of the body. There seems to be points of attraction for this matter, ~~there~~ particularly where aponeuroses, fascia, tendons or ligaments exist we have it thrown out in a soft unorganised structure. It may be turned out like brain, being devoid of all cohesion, from which it has been called encephaloid, medullary or brain like cancer, in contradistinction to schirrous or hard cancer. When vascular and bleeding, the vessels distended with blood, then it is.

called hematides. This matter is thrown out distending the surrounding parts by increase of the deposite. It is always surrounded by a sac or capsule of the cellular texture.

It has some resemblance to the fatty deposite which sometimes takes place in the cells of the cellular texture. But this is not malignant, having little difference from common fat. The fatty tumours belong to the class sarcomatous.

It differs from the deposite of fibrin which is sometimes met with, as in the heart; it increases the size of the part. It is called hypertrophy.

It differs from the disease of the testicle called sarcocele, which is a fleshy increase only.

On the bone we may have a bony enlargement, called exostosis

Any tumour or enlargement depending on a deposite of lymph, is classed under the head of common enlargements. But malignant tumours are the result of a deposite of a new substance, differing from any substance in the body, (and no doubt arising from unhealthy digestion). Whenever we have a mass of hard or soft mat-

ter deposited, resulting from a morbid secretion we consider it malignant. We cannot check it by diet or by courses of alteratives; it is true we can sometimes diminish its size by judicious treatment, active courses of iodine, which promotes absorption even of the sound parts. I have seen these tumours diminish by this treatment, but this is all that we can do; we cannot effect a cure; we cannot correct the depraved state of the constitution. There is always a strong disposition in this disease to reproduction (from ~~the~~ malignant or morbid state of the ~~secretions~~.)

When not vascular, the vessels not distended with blood, and not bleeding, it is called a simple fungus. But it generally does bleed. When vascular, the vessels gorged with blood & when cut open bleeding profusely, it is called fungus hematodes. There shoots out from the opening a soft, spongy tumour, which is alternately sloughing & bleeding, speedily destroying life.

When in connection with a bone, it produces absorption of it, and it is then confounded with Osteo Sarcoma. I consider it as dangerous, if not more so, than Osteo Sarcoma, being fatal from the constitutional

irritation, which is kept up, — the frequent discharges from hemorrhage, — the colliquative discharge — and low hectic fever. The tumour is not so dense and cartilaginous as that of Osteo Sarcoma. I am confident these tumours, which generally occur in tendons, fascia and aponeuroses, when in contact with bone, produce absorption of it, but are different from Osteo Sarcoma.

Hydatids are very apt to exist with fungus; these are considered by some animals of the lower order.

There is sometimes in this fungus a variety of cysts filled with this brain like matter, soft and dough like. The feel is soft and yielding but not fluctuating (it feels ~~exactly like an apple-dumpling tied up in a gum-elastic bag.~~) With common practitioners it is very apt to be mistaken for fluctuation and an abscess; but if careful, in feeling you will find it soft and dough like. Mistaking this for an abscess they are apt to puncture it; Nothing would be more dangerous than the irritation, which might arise, from a puncture. It will be followed by ulceration, attended with a discharge and rapid growth, of a fungus. This plan of puncturing should only be practised when about

to operate for the removal of the mass. And when it is punctured it should only be done to satisfy other practitioners, who have doubts as to the nature of the disease. This puncture should be made with a cataract needle, or what I prefer a narrow lancet, and oblique as directed for the cold abscesses. If it be an abscess, matter shows itself, if a cyst filled with serum this shows itself, but if it be this disease, we shall have a jelly (stained with blood) or an ichor stained with blood, but more commonly only blood. When this is done the puncture must be closed and the part kept quiet, keeping the patient in bed.

The way in which I distinguish this from other tumours is by the history of the case. This begins small and grows slower than an abscess — there was no inflamation or no contusion as in an abscess. But the best way to distinguish it is by feeling. Hold the palmar surface of one hand upon one side and tap upon the other. There is no undulation or wave like sensation as in an abscess, but it feels soft & like an apple dumpling in a gum-elastic bag.

Lecture 38th January 6th 1843.

Black Fungus - Melanosis. This is so called from the colour, and from this it is considered a separate disease by some, from the fungus described, but I consider it a variety of the same disease. There is the soft brain like matter differing in colour only, this being like the pigmentum nigrum of the eye. Sometimes there are seen small blue tubercles, like shot under the translucent skin. These are small ovoidal tubercles, which ulcerate and shoot out a fungus, then slough, throwing out black matter. It pursues the same malignant course that the other does, sloughing from time to time, bleeding and carrying off the patient. When removed it is likely to return again (and when removed a 2nd or 3rd time will again return). According to my observation it is the most certain to return of all the forms of fungus. But yet we are justified in operating to procure a respiteve and palliation and not a certain cure. But when we see that the disease will destroy life, however in a short time we are not (~~then~~) justified in operating.

Fistula lacrymalis. The operation consists in removing obstructions in the ductus ad nasem resulting from catarrhal inflamation. We may have an obstruction in the upper parts, in the small lacrymal ducts, which cannot be removed by an operation. The plan here is to remove the thickening by leeching, bleeding if necessary, low diet and astringent applications of lunar caustic or alum and by restoring the secretions. By this treatment we can sometimes cure fistula lacrymalis and some surgeons say in all cases. This treatment must always be resorted to and the inflamation removed before operating. When inflamation exists the operation is absurd. We must not only carry out this treatment before, but after the operation is performed.

In operating I introduce the point of the bistoury below the tendon of the orbicularis muscle at the inner angle of the eye, making the cut downwards. We may cut against the bone, especialy when the sac is not distended with tears, when we may convert it into an abscess. When we get behind the duct I would not use force in getting the director in, as we might separate the mucous membrane from the nose.

I push the bistoury down the duct to separate the stricture, and then introduce a tube. Some push a tube down and leave it in permanently; but there is risk from catarrh exciting inflamation in the duct, and the formation of an abscess. I prefer a probe, with a button extremity, leaving it remain until inflamation has been overcome, then withdrawing it, and healing the opening in the integument by covering it with a piece of adhesive plaster.

Removal of the Septum of the Nose. We cut out the septum of the nose when it produces deformity from enlargement or Hypertrophy, or when it keeps up chronic inflamation and obstruction in the nose. The cold air keep up irritation and snuffling, and in some cases I have known determinations of blood to the head, giddiness and convulsions.

I cut through the septum, then cut all around the mass removing it. Being removed the nose falls into a natural state, and the part cicatrises between the 2 mucous membranes.

Hare-lip. This operation, simple as it is, is fre-

quently unsuccessful. Whether it be double or single, surgeons are not aware of the importance of cutting the frenum, and of dissecting up the commissure of the lip. When this is not done, we will always have stretching of the lip, and force required to keep them in contact. Not only should the commissure of the lip be cut but the depressor muscle - the depressor labii superioris. The next thing is, in cutting the lip, is to take care to carry the incisions into the cavity of the nose. (Most surgeons only pare away the lips up to the fissure of the two. By this it is apt to be unequal and apt to fail in cicatrizing.)

After dividing the commissure, which you can readily do with a bistoury, you may then pare the edges with scissors or a bistoury. Some surgeons say with scissors, the parts are lacerated, and do not unite well, but if sharp this is not the case, and I prefer them. We must pare away the lip so as to have it a little of a crescentic shape, cutting away more in the centre than at either end. By this we prevent a notch in the ends of the lips, and by making a larger surface prevent a shortening of the lip from

contraction of the cicatrix. This should not be cut out too much, as by making the surface too long we should have a nipple projecting below, which would have to be removed. A straight pointed bistoury may be used if sharp, but sharp scissors are the best. Having cut the edges we then bring them together by the twisted suture. Needles of silver or steel are used for this purpose, having a hole in one end into which triangular spear headed steel points fit, and which may be drawn out. The common steel needle, with the spear point, may be used, where small needles are required, and the points, after they are introduced, may be broken off with a forceps. Having pared the lip, we press the coronary arteries, and introduce the lower needle first, carrying it from the outside close down to the mucous membrane and deeper than the coronary arteries. It should be almost in contact with the mucous membrane, and introduced into the opposite lip at the same depth. Many fail from taking too light hold with the needles. By carrying them in deep we prevent the fluids from getting between the edges; it also prevents hemorrhage from the coronary ar

ties. We then apply a thread, which should not be too tight, wrapped around the needle like the figure 8. Having made a few turns of the thread in this way, I then carry it circularly around to embrace a larger portion of the lip. Having fastened the needle we then take out the head. We then insert the other needle in the same way near the nose, which being done, I then carry the thread circularly around both needles, acting upon a large surface of the lip. Some use adhesive strips between the needles but these keep the parts too moist. I always leave them dry by which I insure a union by the (adhesive inflamation or) first intention. In 4 or 5 day, I take away the needles. by holding the lip with the fingers of one hand, turning & pulling out the needle with the other, leaving the thread remaining.

Cancer of the lip. – Operation for. Pass a bistoury through the lip below the cancer from the inside, then cut out on one side, then the other making it crescentic shape. When the glands of the throat are involved, it is always necessary to take out a V like portion, making the two incisions always meet at an acute angle and never obtuse, by which the danger of sloughing is over come. In performing this operation always separate the commissome of the lip. By this we can carry the incision over the chin and down into the throat, taking out the glands and a part of the bone if diseased. Bring the edges together as in hare lip with needles.

Stomach tube. If we attempt to introduce this when the patient is lying in bed or sitting on a chair, we will fail, the instrument catching against the posterior part of the pharynx and fauces. The head must be pulled over the edge of the bed to bring it in a straight line with the passage. If we leave the patient lean back on a chair we can introduce a probang or forceps, but in cases of poisoning requiring the introduction

of the stomach tube we must leave the patient lying on the bed as we find him. If we keep the tongue back and the head depressed we will never fail in hitting the passage into the oesophagus – By this it cannot go into the glottis.

If we wish to introduce a tube into the larynx, we insert a hook into, and pull out, the tongue. We push the instrument along the inferior meatus of the nose, then introduce into the mouth the finger or a hook, seize the tube and introduce it into the top of the larynx. We can tell when the instrument has entered by the passage of wind through it. This is decidedly better in many cases than the operation of laryngotomy. Metallic instruments are sometimes introduced into culprits who are about to be hung, respiration being kept up (when hanging) through the tube.

Lecture 39th January 7th. 1843.

Diseases of the Mamma. These are liable to a great variety of derangement. They are commonly divided into 3 kinds.

Sarcoma. This is the result of a chronic inflamation producing an enlargement of the gland, which may be caused by tight lacing or blows, and frequently is converted into an abscess. If left unrelieved it frequently suppurates and ulcerates. This inflamation, most commonly, arises out side of the ducts, but I am convinced it may arise in the mammary tubes, when it produces obstruction in them. If an abscess exists when tapped early, there will be a discharge of milk; if later, there will be a discharge of matter and milk; if left still longer it will become an abscess, which will granulate and heal as common phlegmonous abscesses do.

Under repeated attacks of inflamation, an effusion of lymph takes place between the milk tubes, producing an hypertrophy of the the organ then we have a fleshy or sarcomatous tumour of the breast

Under a generous diet, alteratives, rest and open air with a compress and bandage over the part, keeping up a gentle pressure, the lymph will generally be absorbed. If (at the time) the child is sucking, it must be weaned. Only in rare cases will commonly particonatous enlargements continue, being the result only of a continued adhesive inflammation in the interstices of the gland. The tumour is large and inconvenient only from its size. There is no specific disease; no cancer, scirrhous, or medullary, or no scrofulous affection. The operation for removal is a severe one, from the large size of the tumour, and produces a severe constitutional shock. And there is considerable hemorrhage from the number of vessels which are cut in operating. We must always avoid removing it by an operation when we can. We can commonly cure by alteratives, by generous diet, and by a well regulated pressure with a compress and bandage. It is only when we fail in relieving by this treatment, that we are justified in operating. When the tumour is removed this disease will not return.

Specific diseases of the Breast. In one variety there are small tubercles which may be felt beneath the skin, (and) which are painful, lying between the milk tubes, sometimes the size of a pea, sometimes that of a pullets egg. Sometimes no doubt these exist in the milk tubes. When I feel these long, not globular, and round as the others, I think it is in the milk tubes.

When depletion by leeches, alteratives, laxatives, restoring the secretions and covering the breast with the Camphorated mercurial plaster, persisted in for a sufficient length of time; or the use of iodine fails, it is proper to remove such morbid parts. For the purpose a small incision may be made and these parts dissected from the sound parts of the breast.

Mercurial Alteratives may be given to correct the secretions, and carried to gently touching the gums; a well regulated diet persisted in, and the Camphorated mercurial plaster ~~used~~, made of 10 grs. of Camphor to 1 oz of Ointment and spread upon a large piece of linen cloth, sufficient to cover

the breast and extend 2 or 3 inches above and below, may be used. There may be superadded to this a broad bandage, worn moderately tight for 6 or 8 weeks. By this we may mitigate the disease and frequently effect a cure.

If this does not succeed an incision may be made parallel to the tumour and the diseased part dissected out.

<u>Genuine Scirrhous Cancer.</u> This is the most common disease that affects the female breast. When cut into it seems like fibro cartilage, grinding & cracking under the knife. It generally feels like a hard metalic surface and of a metalic heaviness. The surface is livid and purple and the nipple retracted. After a while it shoots out a tuberculous tumour over some part of the breast, generally near the areola which is very apt to be affected being of a glandular structure. In this there is a hard gristly indurated tumour extending over a greater or less surface, and accompanied with a derangement of the general health. There is emaciation, a shriv-

elling of the surface, a ~~marasmus~~ cachectic appearance. In the early stage of this disease, this (~~marasmus~~) appearance will not be ~~seen~~ noticed, except it be rapid in its progress, or in very old persons. There is always in this disease a sense of lancinating pain, a darting shooting or pricking pain as if needles or thorns were forced into the breast. These do not run in the course of any particular nerve; sometimes upwards to the clavicle; sometimes inwards to the sternum; sometimes downwards and sometimes outwards. Sometimes they run at one time in one direction at another times another direction. Sometimes they run obliquely.

The difference between this and sarcoma is that it is harder and firmer than sarcoma. In sarcoma there is not the lancinating pain, not the marasmus & wasting.

In cases which have progressed further we find a tumour of the lymphatic vessels going to the arm pit. This disease has always a disposition to extend. If we trace these below the margin of the pectoralis muscle, we will find hard tense lines; and if we examine the axilla we shall

find in it hard lumps

If it has progressed further, we have ulceration. Sometimes the edges of the ulcer are turned out, like the external petals of a rose, from which it has received the name of rose cancer. The surface looks red and angry, and there flows from it a gleety ichor, but not pus unless a small abscess exist in some part with it. If irritated it discharges a bloody sanious ichor.

In removing the breast for this disease we must always remove the fat around, and always include the areola in the incisions, which are made semi elliptical in shape.

Why when the skin is not disturbed, by ulceration, the fat around sound, and the axillary glands sound, can we hope to cure by operating. If the skin has ulcerated, if the axillary glands are diseased we can never expect to cure.

Fungus Cancer or Encephaloid tumour of the Breast

Besides the scirro cancer, we have this tumour of the breast. It is soft and dough like, (feeling

like an apple dumpling tied up in a gum elastic bag.) This is very apt to be mistaken for an abscess.

Hydatids. We sometimes have hydatid cysts in the mamma; these are (considered) an animal growth in the body. I consider them of the nature of worms. They are the result of a morbid disposition in the part. They sometimes exist in conjunction with fungus. Sometimes they may be felt like lumps or balls in the dough like mass of fungus.

In order to induce me to perform the operation of amputation of the female breast, which is the most horrible and disgusting, to my feelings, of any operation in surgery, I require that the constitution shall be good; that there shall be no deranged condition of the system particularly disease in vital organs. The lungs must be free; there must be no cough, no bronchitis. We must ascertain this by the ear (the stethoscope produces a confusion of sounds) and by percussion. When disease exists in the chest an operation is out of the question, or when disposition to disease exists. If the external disease appears to be a diversion from the chest, we will find upon removing it, the disease to fall on the

chest. We must not operate in this case late or early. If we have disease in the abdomen we must not operate if it cannot be corrected. If we have jaundice, if we have a pale and anemic state of the system, or a torpid state which we cannot correct; if an enlargement of the spleen or pancreas exist we must avoid the operation.

If the disease exists in surrounding parts; if both breasts are affected, if the glands in the groin are affected, or the liver affected, we avoid the operation. The disease must be confined to one breast. When the glands in the axilla are affected we must expect a return of the disease. When the glands in the axilla however are affected, and the disease has extended so farther, proving that it is not far gone we may depart from this rule. In general the operation is only a palliative and not a cure. In 9 out of 10 cases the disease will generally return in from 9 to 18 months. We must only hold out the operation as a palliative or a respite.

Amputation of the Breast. In the mode of operating Surgeons differ. I always made 2 semi lunar incisions, which (shall always) meet at an acute angle, including between them, the areola, and the disease if it extends beyond the areola. Astley Cooper makes the incisions perpendicularly but I prefer making them parallel to the fibres of the pectoralis major muscle. I have the patient sitting on a chair, and prefer making the lower incision first, at which place we shall have little hemorrhage from the vessels. I prefer cutting the deep before making the other incision. If we have diseased lymphatics they will be seen. I always cut up to the fibres of the pectoral muscle. I dissect up 2/3 of the gland from below before I cut above. The incision above is made in the same way. The arteries can be secured by assalini's forceps. I prefer leaving the surface unclosed for 6 or 8 hours (before closing it) or if the operation be performed in the evening leaving it exposed until the next morning, keeping it cool and with kitchen and water.

If the glands in the axilla are affected, the incision may be extended to them (glands, removing them)

Isaac Hall's truss to suppress bleeding after operations about the neck.

with the breast. When they are affected we never remove the breast entirely, but leave it hang, extending the dissection along the lymphatics.

Lecture 40th January 9th 1853.

Tumours in and about the neck and throat. Tumours sometimes of a large size grow from the side of the trachea and the body of the thyroid gland, and are liable to be mistaken for aneurism. These sometimes produce difficulty of respiration, articulation and deglutition, and determination of blood to the head from by obstructing the jugular veins. Sometimes the body of the thyroid is enlarged, for which in one case I removed it. We have in this region also the fleshy or sarcomatous tumours. The operations for the removal of these tumours are the most dangerous of any in surgery from their great vascularity. ~~Simple tumours of the thyroid giving rise merely to a deformity, and of no specific nature are not to be removed by an operation.~~ In the disease called goitre I use laxatives, avoiding sudden gusts passion (of the mind) and exposure to (sudden) vicissitudes

Use Hall's tube to suppress bleeding in cheek

o when we operate for a foreign body — (× ~~when to introduce laryngotomy tubes~~)

of temperature. Jalap and Cremor Tartar or Magnesia may be given. These answer better than Iodine. Oil, when the patient is scrofulous must this be given; in the of pale lips & pale knees. When it exists with vascular excitement this does injury. Use salt water baths which harden and Constringe the skin.

Lectures 41 & 42nd January 10th & 11th 1843.

Tracheotomy and Laryngotomy. In the operation of Laryngotomy we cut into the trachea above the cricoid cartilage, through the crico-thyroid ligament. In this operation there are only 2 small branches of the thyroid artery cut. It may be safely performed by plunging the knife directly into the trachea, making the incision up and down in the cricoid space through the cricoid ligament. We make generally the incision first up and down, over the cricoid cartilage, in the mesial line between the muscles of each side. *We pull these to one side, expose the cricoid ligament, then cut through it transversely to a sufficient extent to enable us to thrust the tube into the

trachea. We pass in a laryngotomy tube, and tie it fast with tape or strings of gum elastic, and then cover it with a gauze to prevent dust and other foreign bodies being inhaled.

When we operate to prevent obstruction in the air tube and the passage of air to the breast, from tumours or large tonsils, we pass (in) the tube until we dispense or remove these. This can remain only a few hours, when we must take it out and clean it as it becomes coated with the secretions secreted in the passage.

When we do not intend to introduce the laryngotomy tube, and operate to remove foreign bodies, I make the incision up and down. I then introduce a blunt probe upwards detaching the foreign body if it be alone and causing it to be expelled. If I find no foreign body alone I then pass it downwards. I then use a small narrow pair of forceps, moving it about attempting to dislodge the foreign body. By the cough excited by the instrument the body is apt to be wafted up. We should require the patient to make 3 or 4 attempts. If it be in the bronchial tubes it will sometimes

* Tie up vessels either arteries or veins before opening the trachea.
° make it about 3/4 or 1 in below the cricoid cartilage.

he coughed up. It is seldom that the body is caught with the forceps. Persons are very apt to be mistaken in seizing the palate of the bronchia for the foreign body, by pulling which very great harm might be done.

When we make the incision in the trachea we make it far enough down to avoid the thyroid gland. We make a perpendicular incision in the mesial line, avoiding carefully the thyroid gland from which we may have a profuse hemorrhage, and the thymus gland which come up the neck.* We then make the incision into the trachea up and down. The laryngotomy tube is not proper here. I pass in a metalic tube bent to pass with ease, and then bent again at top to one side. I frequently use ladies hooks, fixing them into the edges of the opening. If this does not keep it open with other things I then pare out a piece of the trachea.

Tubes produce inflammation, cause suppuration and purulent matter to be thrown out, on which account I believe they never should be used after adhesive inflammation is excited.

Surgeons are mistaken in supposing that

when the foreign body is in the bronchia, by cutting into the trachea low down, they may reach it. In cutting here we are very apt to have a profuse hemorrhage, the part becoming engorged with blood by the suffocation caused by the foreign body. I have the hemorrhage in one case prove fatal 3 hours after the operation.

Parotid Gland. We have tumors of the parotid which produce tension of the surrounding parts, with an aching pain; which destroy mastication and which produce a tetanic rigidity of the muscles from an affection of the portio dura. This disease is not true scirrhous cancer being unaccompanied with the lancinating pain, and it does not project inwards. In enlargements of the parotid gland the tumour presses as much inwards upon the throat as outwards. Here outer tumours only project outwards. True scirrhous cancer of the parotid is very rare, I never (having) saw more than 1 case of it. In this case it felt as hard and gristly as iron; just as if metal had been poured in where the gland was; there was tension of the surrounding parts indicating cancer, the parts are dragged in from around towards the tumour and tensely

bound down, and when the tumour is removed from retraction of the parts, the cavity is larger than the size of the mass removed; and there was lancinating pain.

In all the cases except one in which I removed the parotid gland the portio dura was cut and the face paralysed; the patients could not close their eyes, but had to close them with their fingers. In the case in which it was not cut, I found the part of gland through which it passed sound, from which I dissected it from around it. The nerve at this part was entirely exposed and the face for the time became paralysed, but when granulating shot out, filling the cavity and surrounding the nerve, the paralysis was overcome, muscular motion being restored. This took place after 4 or 5 weeks. The respels of the granulations and those of the nerve unite. This shows a great physiological fact; as that a nerve may be exposed along part of its course, and afterwards resume its functions. When I was a young surgeon if a portion of nerve became insulated in an operation, it was always cut across, from the opinion that as the nerves were torn it never could resume its functions; but this operation shows this

is not to be the fact, and that nerves may be exposed, and the parts at the time may be paralyzed, and that as the nerves again unite with those by the granulations the functions of the nerve may be restored. When this nerve runs through a sound part of the gland, it may be left, and the horrible deformity resulting from the destruction of it avoided. Not many tumors in this region require the removal of the parotid gland, for those external tumors may be taken away without disturbing the gland.

Even tumors of the parotid must not always be removed. The operation is a dangerous and hazardous one, is attended with danger to the life of the patient, and must only be performed when it cannot be avoided. By alteratives, laxatives and low diet cases which require removal can be checked and the indurated matter be absorbed. Even in malignant tumors of this gland I have kept them in bay for years by judicious treatment. By the use of hydriodate of potash regulated diet, alteratives and astringent gargles I have had them improve. It is wrong to perform the operation, so dangerous and formidable, of removing the parotid gland whenever the tumor is not making pro-

gans which endangers life.

Removal of the Parotid Gland. I commence the incision in the front of the tubercle of the ear, which in diseases of the parotid, is always pushed out, and sometimes the cartilage of the ear is separated from the bone. I carry the first incision in front of the gland making it semilunar. If only a portion of the gland is diseased it is still better to remove the whole. I cut through the parotid fascia. The cut is to be carried in front of the socia parotitis over the masseter muscle. I reflect back the socia parotitis and dissect back the anterior flap until I have removed the socia parotitis. I cut through the duct of Steno reflecting the part of the gland in which it is seen back. Then to avoid hemorrhage I make the posterior incision. I make this incision to the anterior surface of the masseter muscle, separate the gland from the muscle, which is almost always attached, sometimes requiring the removal of a part of the muscle. I loosen the gland opposite the posterior surface, then deepen the incisions. I cut down on the cervical fascia, and then search for the Digastric and Stylo.

Hyoideus muscle, which we must always make our land mark. Having made the 2 incision, we dissect around the area of the gland, and raise it up, searching for the stylo Hyoideus & Digastricus muscles. Having seen these I lift up the gland taken I bring up the carotid artery. We see the carotid artery after it has given off the facial, lingual & pharyngeal branches. Surgeons are mistaken when they say that the carotid artery must be taken up, for it is after these 3 branches are given off that we meet with it. I raise it up and pass a double ligature around it, the one high up and the other low down to prevent the recurrent circulation. Between these 2 ligatures I cut the continued trunk of the external carotid. It is now clear, and having no more difficulty we carry on dissection up to the zygoma. The only nerve is the superficial temporal, which gives pain in the operation. This runs through the gland, and passes up to the temple. From cutting this nerve a continued paralysis of the temporal region follows, which shows that the gland has been removed. We cut the portio dura which gives no pain but produces a paralysis of the muscles of the face.

Having cut these nerves and cut the artery it is a very easy matter to raise the gland out. Having done this, if the whole mass be not removed, we can now take away any granules of the gland that remain. We sometimes have a recurrent circulation and hemorrhage from a few small arteries which are cut. I generally take these up when I raise the gland. Sometimes weeping of blood follows which it is difficult to suppress. I have succeeded in checking this instantly by raw turpentine after other means had failed.

Diseases of the Chest. Tapping. The old surgeons had an idea that when this operation was performed the incision must be made between the 6th & 7th ribs at their axillary aspect, but we now puncture at any place, wherever we have a collection of matter (hepatic) as indicated by percussion and auscultation and succussion. We must only avoid going against the lower edge of the rib, along the intercostal space, through which we puncture, as the intercostal artery runs along the groove in the lower edge of the rib, and by puncturing it we might have hemorrhage.

*In resection of the ribs cut no deeper that the internal intercostal muscles.
*It is not necessary to cut deeper in the bone than the internal table.

Resection of the Ribs. This operation may be performed (with) the pleura left entire, or the rib may be dissected from it. We cut through the cartilage (~~of the rib~~) near the rib, with a scalpel, guarding lest it enter the pleura. We then cut around the margin of the rib through the intercostal muscles* and then cut through the rib at the part desired with Hey's saw*. An elevator may then be introduced and the portion prized up. By this we save the trouble of dissecting the portion out, by cutting down on the pleura. In all cases of disease requiring resection of the ribs I have found the pleura thickened and the removal of the portion by the elevator has been very easy. In this way I have removed portions of several of the ribs, with a piece of the sternum. Where this operation is performed in cases of cancer, after the removal of these parts, we can dissect away the diseased parts from the pleura. Granulations shoot up from the surface and cicatrization takes place. If we have cut into the pleura, there will be retraction of the lung from the passage of air into the cavity of the chest.

Lecture 43rd January 12th 1843.

Injuries and diseases of the chest.

Wounds. When these affect only the walls of the chest, the skin and muscles, and do not enter the cavity, they must be treated like all other flesh wounds.

If the puncture extend into the cavity of the pleura, on one side, the two cavities being separate at the mediastinum, there will be a rush of air into the cavity of that side, accompanied by a sinking or falling down of the lung (of that side). (The old surgeons supposed this sinking to be a collapse of the lung, but it is not merely a falling down). The lung is actively contractile, owing to the yellow elastic fibrous and cartilaginous substance in it. (And there is a great quantity muscular substance in the lungs which exists between the rings where the cartilaginous plates exist). These always tend to contract but are prevented by the (muscular) walls of the chest, and the lung is forced to distend by the pressure of the column of the atmosphere within, which is equivalent to 15 pounds to the square inch. As long as there is no wound through the walls of the chest, these remain distended, but when an aperture is made, the

air gets into the cavity counterbalancing the pressure. The pressure on the outside and inside of the lungs, balancing each other, the lung sinks down forcing out all the superabundant air. This may be seen in the dead subject, in which the lungs are healthy and their are no adhesions along the surface. If the cavity be punctured contraction follows and the air is forced out through the trachea, sometimes with sufficient force to blow out a candle.

Unless the wound be large and free, the opening larger than the chink of the glottis, the wind is apt to pass in, in small quantities at every inspiration. But when a large incision is made the lungs instantly shrivel up, and all the air, except a small quantity, is forced out. When the patient breaths the air will pass into the lung of the opposite side through the trachea but on the other side it will pass through the opening.

If blood vessels have been injured, the blood will pass more easily into the chest, than it will externally. This hemorrhage may go on (concealed), from the intercostal and internal mammary arteries. The greater part of the blood, if not all of it, is drawn inwards. Generally all of the blood passes inwards until a great

quantity is collected in the chest, and then a little runs out.

We must attend to the situation or direction of the wound. If we see it close by the side of the sternum, we suspect the mammary artery is injured, and then we watch the case. If the breathing becomes short and constricted from pressing down of the diaphragm by the blood we search for the artery. We dilate the external incision search for the bleeding vessel and take it up with a tenaculum or with Assalini's spring forceps, and pass a ligature around both ends.

If the wound be in the intercostal space at the upper surface of it, or at the upper surface of the rib, and runs upwards, we always suspect the intercostal vessels to be injured. If the symptoms be found as above, we dilate the wound, cutting through the external intercostal muscle. It is not necessary to cut deeper as the vessels run between the two muscles. We trace out the artery and veins and then take them up with a tenaculum or forceps. This artery can be taken up contrary to the opinion of the old surgeons. We tie the opposite sides of the vessel.

Wounds of the chest, unattended with

wound of the lungs, are by no means dangerous. These wounds, unattended with injury of the lungs, are more frequent than is supposed. Some Surgeons say that a wound very seldom enters the pleura without wounding the lungs, but I have frequently seen it. I have seen the case of a boy in which a nail was forced obliquely upwards through the intercostal space to the depth of 3 inches. In this case there was no cough or no expectoration of a bloody frothy mucous indicating a wound of the lung.

The treatment of cases in which air only has entered the cavity, is simple. The only difficulty has been in oblique wounds, in which case the air may be forced into the cellular texture, producing Emphysema.

When it has entered the cellular texture the treatment has always been simple. I have closed the wound and it has been absorbed in a few hours. When in the chest too it has always been speedily absorbed. As absorption goes on the lung will be forced up by the pressure of the air within.

In cases of this kind I close the external wound as speedily as possible, and do not squeeze

out the air, grasping the patient like a polar bear as the old surgeons did. The air in the cavity is not irritating. I close the wound (leaving it) to unite by adhesive inflammation. I apply a layer of patent lint, then a compress over it with adhesive strips and a bandage passed around the body. If the wound be long I employ a few sutures made with a fine cambric needle.

When blood gets into the cavity it always gravitates (downwards pressing) upon the diaphragm. If it be in the quantity of a half pint or pint it impedes the action of the muscle rendering respiration laborious and oppressive.

In this case I lay the patient in a depending posture permitting the blood to run out. If I see coagula at the opening I pull them out, sometimes in large portions. Sometimes it will run out. It is not proper to introduce syringes for the purpose of pumping it out, made slight pressure on the abdomen and chest, which will favour the blood running out. Blood in the cavity is worse than air, from the difficulty of its absorption. Often the difficulty of breathing will continue for 4 or 5 days. To overcome this use proper depletion, mem-

cinal alteratives and antimony. It requires a longer time for absorption than air.

It is very seldom that much blood will enter the cavity. It is only in the hands of those who neglect to take up the ostey that we have too much to be reabsorbed. In this condition if we wait 8 or 10 days, using depletion, antimony and alteratives, surrounding adhesions will have taken place, and then we will have a circumscribed collection of blood, which will be a bloody abscess separate from the cavity of the chest. This blood will percolate through the external parts, causing them to look livid or black. This leads the patient to think the part has mortified. It differs from mortification in not being able to peal off the scarf skin, and in there being no smell. This appearance then indicates the formation of a bloody abscess.

When the patient labours under oppression and sinking, this is apt to exist. If we apply the stethoscope we (shall) find a loss of the respiratory murmur; there is dulness over the part on percussion; if we succuss or shake the patient we can hear it.

To let a collection of fluid out of the cavity of the chest, serum, blood or matter, we make the puncture as near as can be ascertained over the centre of the fluid: this is the only place of election. The incision may be made as low down as the 9th or 10th ribs in collections of fluids. The diaphragm is forced out of reach of the knife in these cases. We cut into the cavity of the abscess, through the intercostal space making an incision an inch or 1½ inches in length. We leave this open as it does not affect the cavity of the chest. We apply poultices over the part. The fluid will come out by suppuration and the cavity heal by granulation.

Lecture 44th, January 13th 1843.

Abscesses in the cavity of the chest. These occur in healthy and unhealthy constitutions. In the lean phlegmatic or scrophulous constitutions in which the matter consists of flakes of lymph in the serum of a curd like appearance, in pale lipped and pale livered persons, these are incurable.

We have these collections in healthy constitutions, in which the abscess is of the phlegmonous character,

In time, surrounding adhesions convert the collection of matter into a genuine abscess. There is sometimes oedema and an erysipelatous blush of the skin over the part.

Dropsical effusion in the Chest. This may take place in one or both sides of the chest and in the pericardium. It is a disputed point whether to rely on the common remedies for effusion, digitalis, calomel, counter irritation & cathartics, or whether to tap (in effusion into the pericardium) The majority of surgeons are not in favour of it. Cases have occurred in which tapping mitigated or palliated them. By it the system becomes more susceptible to the action of remedies, which afterwards act better and sometimes effect a cure. In many cases it cannot be cured, arising from ossification of the valves of the heart. In mild cases in which we have effusion, we may sometimes cure by cups & leeches to the spine and hydragogue cathartics.

I have not much confidence in tapping either for effusion into the chest or pericardium.

In operating, surgeons cut through the scarifies and introduce the finger, feeling the pericardium

and puncture it. Some trephine the sternum. I would not recommend this.

Compound wounds of the chest. Penetrating wounds, which enter deeply, wounding the lungs, heart or great blood vessels, are of a more grave and serious character than superficial wounds. By the old surgeons all cases of wounds of the lungs and large blood vessels were considered necessarily fatal, and all cases that recovered were considered only simple wounds. Within a few years there has been so great a revolution and improvement in military surgery brought about by Baron Larrey, that we now know (~~that we now know~~) that wounds of the lungs and large blood vessels ~~must~~ are not necessarily (be) fatal. They thought the air and blood were irritating, and, for the purpose of removing them, they enlarged the external wound. Catheters, probes and tubes were introduced to search for foreign bodies, for the purpose of extracting them. They used forcible compression to expand the air from the chest. They did this, keeping the ~~patient~~ until nearly exhausted, and keeping the external wound open and sometimes

enlarging it. They also from their fear of inflamation depleted their patients.

I object to cutting out pieces of cellular texture and muscle at the lips of the wound, and to making an oblique wound straight as recommended by Larrey, but these are points of minor importance. Baron Larrey reverses the treatment of the older surgeons. If no foreign bodies, as pieces of cloth, splinters of wood or a piece of ramrod was seen he closed the wound. He only cut out those bodies which were seen in the cavity. He closed the external wound, leaving the blood and air in the cavity, and left it unite by the adhesive inflamation. Commonly by this, symptoms arose, to combat which it was necessary to use depletion, fresh air, antimony & cathartics, as the particular case required. By this treatment he conducted his patients to a favourable issue. Now all good surgeons admit this is the true practice.

In the first place we have a wound of the lungs which lays open the pulmonary arteries or some of the air tubes. As long as the external wound continues open and blood and air escapes from the

lung, there will flow from it a frothy blood. By dilating the wound this will flow out in greater quantity. There will be only an increased discharge of air from the air vessels and blood from the blood vessels. This will go on until the patient faints, when the action of the heart almost ceases, the blood collected may coagulate and close the wound and the patient may get well. But it is rarely that they will react. By keeping (~~open~~) the wound open it is very rarely that patients (~~will~~) get well. By closing it the lung will collapse and the air and blood will pass into the cavity. We close the wound as firmly (~~as possible~~) and ~~as~~ completely as possible. I do this by the blood and lint, passing long strips of adhesive plaster over it, and a bandage around the chest. I make it sufficiently tight to compel the patient to breath by the diaphragm alone.

The hemorrhage continues after the wound is closed from the wounded lung. There is now a plenum state instead of a vacuum. Both classes of vessels being opened, air is thrown out from the air vessels and blood from the blodd vessels into the cavity by which pressure is made upon the lung. It will not do to introduce

styptics, hot irons or pokers into the cavity to the bleeding vessels. It will only do to close the wound.

If a large blood vessel is wounded, and the pulse is not reduced, the respiration becomes more and more difficult, the blood continues to flow pressing the diaphragm down, the intercostal spaces become distended, and we see the patient would perish if these continued, we must turn him on the affected side, permitting the lung of the opposite to carry on the functions of respiration, we must elevate the head, admit cold air, and use cold lotions, and if necessary bleed. This should be carried to syncope, which must be kept up and the patient kept quiet for a sufficient length of time for the blood to coagulate. The patient should be kept quiet for a few hours and if possible for a few days. Lymph will be effused and become organized by vessels shooting into it, and in this way we will have a permanent closure. The air and blood will be absorbed in some measure; the air very soon in 3 or 4 days, and the rest will gravitate to the lowest parts. In 3 or 4 weeks if not absorbed, it will percolate through the walls of the chest over the part, and will

give rise to a black appearance of the skin. It may then be tapped and discharged as directed.

I would by no means have you infer, that all are to be depleted for this condition of things. It is only in sanguineous vigorous and plethoric patients, and not in dangerous, cold and prostrated states of the system. Many are prostrated and cold immediately upon the receipt of the injury from the shock given to the nervous system. In this condition the hemorrhage ceases as in cases of syncope. We admit fresh air, give drafts of cold water. We have to depend on such means in these cases. It may be necessary in some cases to give stimuli to rouse the system. Some give brandy but I prefer the Carbonate of Ammonia with Opium. 5 grains of the Carbonate may be given every ½ hour - hour - or 2 hours as indicated according to symptoms, giving at the same time cold water. If not sufficient it may be necessary to add a few drops of brandy with gruel. It may be necessary to give the aromatic tincture, or tincture of bark with nourishment.

All these cases must be treated according

to the state of the system. Only when plethoric and the blood goes on effusing are we justified in depleting.

If in small quantity the blood may be absorbed and it may not be necessary to tap.

Wounds of both sides of the Chest. We have cases of wounds of both sides of the chest from a puncture by a broad sword; and from the passage of balls through both sides. In one case we record the shaft of a carriage as the patient stood against a barn passed through the chest leaving the heart untouched. This patient got well.

If the lungs of both sides of the chest had been ~~were~~ sound if no organic disease had existed before the injury, this patient must necessarily have died. Even in simple penetrating wounds of both sides, both lungs collapse, and if it does not cut off all the respiration through the trachea, it is a very small quantity of air that passes in. Some fresh air may be admitted and it may happen that it may not be followed by a fatal termination. But large wounds through both sides of the chest, tearing the lungs, the blood

flowing out of the torn vessels and wound, the patient will die.

If Preternatural adhesions of the pleura on both sides exist at the time of the injury the lungs will not collapse; or if there exist on one side that lung may not collapse. If there exist we may have a wound of both sides of the chest neither lung collapsing. This will keep up life, sufficient air passing in through the trachea. If one lung be adherent it may prevent a collapse of that side; or even if part adherent it may keep up the lung. Then if the wound does not pass through the centre of the adherent portion the lung will not collapse.

Not only adhesions but hepatization of the lung may prevent a collapse. If hepatization exist it is generally at the lower portion of the lung. A ball may then pass through the lower part and the upper part remain unaffected.

If tuberculous masses remain in the passive state, the person having no cough or no expectoration the lung may be kept distended. These are generally at the upper part of the lung. If a ball

pass through the part this will not collapse.

If an abscess exist in the lung, it may be opened by the wound, and discharge the matter, and the inflammation will prevent this from collapsing.

We have only to look at the subjects in dissecting rooms to account for the many recoveries that take place after wounds of both sides of the chest.

There is no doubt but that small penetrating wounds of the heart and large blood vessels under certain circumstances may be cured, although wounds of these are more dangerous that those of the vessels of the lungs.

(Case. I had the case of a medical student who shot himself with a large pistol containing two balls, the two passing into the chest making a stagged opening. I arrived about 20 minutes after the injury had been received, and found the patient surrounded with blood having lost perhaps 2 or 3 quarts, and found it still flowing from the wound. He was cold and pulseless. I pressed my hand upon the opening and checked the flow of blood. The patient began to look bright out of his eyes, he began to move his head and look about. The heart began to beat and I found a slight pulse

at the wrist. The chest began to heave. Upon turning him over to examine if the balls had passed through he exclaimed "You need not try". Upon asking him why he did what he had done, he answered "that was too proud to beg, and undertook to steal". I then asked him if I should write to his father, he exclaimed in a loud voice "No". There was a gush of blood at the time followed his motions, and he instantly died.

Examination of body. I found that 2 bullets had entered the chest, making a large ragid opening on the left side directly in the direction of the heart. The pericardium was filled with blood. The balls tore open the left ventricle of the heart at the upper part, making an opening as large as the point of the finger. The balls passed through the diaphragm, through the left lobe of the liver, through the spleen, and immerged at the groin.

The opening in the ventricle was about ⅛ the size of the aorta. From pressure the opening in the heart was closed. The opening in the aorta being larger, and the heart pulsating, it was compelled to send the blood through the aorta, and through the carotids to the brain. The heart continues pulsating, even after it

is removed from the body as is seen in animals, and as was seen in the mesenteries murdered by the spaniards. The blood being sent to the brain enabled him, not only to move and to breath, but to converse. I believe if other organs had not been involved, this patient have recovered. — (Taken from recollection.)

Lecture 45th January 16th 1843.

Emphysema. This is not always trifling. When the lungs are wounded, and the air tubes open, the air is thrown out of the lungs and is diffused in the cellular texture, especially in oblique wounds. It is not only extended over a small space of the thing but also the lungs are affected, ~~it~~ being diffused in the interstitial cellular texture of the lung. After wounds of the lung this is very common. It is outside of the air tubes and blood vessels. It not only enters the cellular texture of the lung but runs back ~~at the~~ root of the lung to the mediastinum, up to the neck and face and down to the limbs and trunk, and indeed over the whole body. Some say the brain, the eye and the bone are

sometimes involved but this I doubt. It is not commonly so dreadful as this. The worst cases occur after fractures of the ribs, the depressed portions running into the lungs. Some say after fractures of the clavicle, the spicules running down behind the scaleni muscle. The pleura runs up above the ribs, lining the scaleni muscles. This explains how it may take place here. In all long neck people and in females and males who lace, the lungs are forced up above the ribs. Not only fractures but wounds and abscesses in this part may produce emphysema

We use ammoniated liniments, and stimulating plasters to restore the part by adhesion and the air will be absorbed. We raise the head at an angle of about 45 degrees. and if necessary use general depletion. Only when this fails are we justified in performing an operation. We then make incisions 1 or 1½ in in length. If the air be beneath a fascia we carry them below this. When extending these may be necessary. Until the wound in the lung closes we may have a frequent return of emphysema. Punctures above the sternum at the inner edge of the sterno mastoid muscle will immediately relieve the suffocation produced by pressure on the larynx.

In emphysema there is a crackling like dried leaves under the skin. I have never seen these extensive cases.

Hernia of the lung. Hernia of the lung I have never seen. It is very rare. Sometimes a small portion of the lung protrudes: in some cases the whole lobe. In some cases this has been treated by Excision; at other times by ligature applied around the protruded portion at the level of the chest; others have seared the portion off with hot irons; others have enlarged the wound and returned back the protruded portion. Under all these forms of treatment patients have recovered. If not diseased the proper plan is to replace the protruded portion in the cavity and then treat by antiphlogistics as if the hernia had not occurred. It must not be seared or cut off, unless it cannot be returned. If lacerated and contused a ligature may be used. The actual cautery I would never use myself.

The only cases in which this has occurred are ~~these~~ cases of severe contusions of the chest, or when the cavity was compressed and the blood and air vessels ruptured and the lung dilated. All such complicated wounds

must be much more dangerous than mere compound wounds of the limbs.

Injuries and diseases of the Abdomen. The abdomen is situated differently in a great variety of respects from the chest. (It is lined by a serous membrane which is liable to effusion of lymph and adhesion in consequence of which in wounds in ~~closes~~ the parts.) In wounds, if the patient be kept quiet, (a favourable circumstance for union) union will take place and prevent ~~the~~ lining membrane from a diffuse inflamation of the most ~~extensive~~ serous membrane in the body. If once the whole, even when not very high, as any epidemic, it is liable to destroy ~~the system~~ patient. The inflamation of the wound is but little. If a wound of the abdomen occur in unhealty, irritable, scrofulous or lymphlegmatic constitutions; if in persons who live in confined, ill ventilated ~~de~~ partments, and ~~live~~ on scanty diet; or if in persons made irritable by the continued use of strong drinks, the adhesive inflamation will not be set up; it will be diffuse and the patient will die in a few hours.

It is situated (in a peculiarly liable manner) favourably for inflamation of the healthy character. The viscera do not

collapse as the lungs do. They are all compacted together, the whole cavity being filled, and give to each other mutual support. The parts being close the slightest degree of inflamation may close the wounds

Stomach. The wounds of the stomach are (frequent and) ~~are~~ dangerous as we are liable to have an infiltration of the contents into the cavity. In wounds of the vessels we are apt to have the contents thrown out, and also of the intestines. It was at one time thought wounds of the stomach could not be recovered from, but we have cases of recovery on record. In one case of wound of the stomach the contents were thrown out and circumscribed by an effusion of lymph by which it was converted into an abscess. This was opened and the contents let out, which were found to be pieces of cabbage, cheese and pastry. Wounds of the stomach are always liable to be highly dangerous from the contents lodging in the cavity and a collapse of the stomach, creating irritation. In all cases in which recoveries have taken place it is by surrounding adhesions.

Gall Bladder. The Bile from its irritating nature, it has been thought, would necessarily destroy life when

infiltrated into the cavity of the abdomen. In some cases in which fluctuation was felt and mistaken for an abscess in the liver, this has been punctured and the patients have died. In a number of instances it has been punctured and bile and gall stones left out. This may be explained by the large size of the gall bladder, by which it pressed against the lining membrane of the abdomen. From this it excited irritation and cohered to it. When it was laid open the contents (bone) came out and not communicated at all with the cavity of the abdomen. When this bladder is distended at the time of the wound there may be a sudden flow of urine and no effusion. In all cases of infiltration of bile a fatal inflamation will follow.

Urinary Bladder. In wounds of the bladder there is always an effusion of urine, and this must always necessarily terminate fatally. Some have been followed by a fistulous opening and a cure effected in this way the urine passing through the opening. Sometimes adhesion of the opening takes place. The parts suppurate and granulate and there is a union of the wounds. In distended states of the bladder a wound may be

received above the pubis leaving the peritoneum untouched, and no infiltration of urine take place. Also in the perineum the bladder may be punctured and no infiltration take place. But in these wounds the urine may pass into the pelvis, where it will produce sloughing and death. Following wounds about the prostrate when infiltration of urine takes place, incisions may be made into the scrotum, perineum and thigh, to let out the fluid before mortification takes place.

The other viscera are not very apt to move in the abdomen, being fixed. A wound of the intestines made with a clean instrument, as that has not a blunt point, is not very likely to terminate fatally. Even balls have passed through the abdomen, and through the bowels as was shown from the feces passing out of the wound, and the viscera have not been displaced. Adhesive inflamation has taken place and a cure followed. There has been left, to be sure, an ugly disagreeable fistulous opening through which the feces have passed but this has some times been cured.

In all cases of punctured wounds of the abdomen the bowels not protruded leave the parts in situ

& spread with simple cerate kept wet with whisky and water.

Lay the patient in a horizontal posture. Lay him on a board for the first few hours with only a little elevation of the head by a small pillow, and move him on this. It is better than a bed, in not allowing motion. By moving the patient, the course of the wound is distroyed, and the motion is apt to produce infiltration, which will lessen the chance of recovery.

Where we have no reason to conclude the viscera have been penetrated, and when no feces, no coloured liquid, none of the contents of the gall bladder stomach or bowels pass off we may hope, and with good reason none are penetrated, the wound may be closed. This may be done by a layer of lint over the blood of the wound and strips of adhesive plaster. If the wound be long 3 or 4 interrupted sutures may be used, making a fine stitch, and adhesive plaster be used between the stitches. A compress of patent lint may be placed over the part.

If the feces come out through the opening the wound must not be closed. A poultice of slippery elm may be applied over it, or what is better a pledget of lint.

kept very lightly by a bandage, that the contents may be allowed to escape. By this the wound may be converted into an artificial anus.

Only where the bowels protrude through the external wound, and we see a wound in the protruded portion are we to use ligatures.

Sometimes these parts called the stomach and omentum protrude and are not wounded. In one case the omentum protruded throug the wound made by a stab. I returned it and the patients got well. I have known this cut off by ignorant surgeons and the patients have got well. In all the cases of protruded omentum which I have had the patients have got well.

I have known the intestines protrude when not cut, I have returned them and the patients got well. In all these cases we wash away or pick off all bits dirt or sticks. This may be done with a sponge but it better to pour water over the protruded part washing away these things. The bowel may then be replaced with caution and the external wound stitched up. This may be done by the interrupted sutures introducing the threads which are part. These should not be passed into the skin only just

* in oblique wounds it may sometimes be necessary to dilate it.

through the muscles down near to the fascia. Lint and adhesive plaster may then be used, with a bandage around the abdomen.

You must not introduce forceps or probes to search for the intestine when wounded. By this you may force out the contents of the bowel into the cavity and may produce irritation of the peritoneum, inflamation and death. The plan now is never to dilate a wound of the abdomen. Leave it alone unless the bowels protrude, keeping the patient still. By this inflamation will arise and block up the intestine.

When bowel protrudes and we see a wound in it, when replaced in the abdomen the contents will come out. This portion has to move and wobble about until it gets to its natural place.

When a small hole or puncture is seen in the protruded portion, we pinch up the part with a pair of forceps and slip a fine ligature well waxed around the end of the forceps, on the portion of intestine seized. We then cut off one end of the ligature, push back the bowel leaving the other end of the ligature out of

the wound. By this end of the ligature we keep the knot just at the bottom of the wound. By the time the ligature is to come off the wound will have united.

Some leave the intestine in with the knot, that it may ulcerate and pass through the bowels with the feces. This it is possible may fail and the ligature fall off in the cavity from which we may have inflammation and a fatal termination, from infiltration of the contents. By this plan the contents will pass out through the external wound before it will pass into the cavity.

If there be a long rent, either longitudinal or transverse we take the finest cambric needles used by the ladies No 5 or 6 with a piece of fine silk, or cotton if strong enough, well waxed, and bring the edges together by the interrupted suture just as in any other wound, leaving one end of each out through the external wound. We make as fine and as short a stitch as possible. They may be made very short on the moist intestine.

Some make use of the continued suture sewing the intestine as ladies do a rent in a glove or stocking, then passing it into the cavity. This is liable

× apply the ligatures ⅓ or ½ in apart.

ble to the same objection with the other, viz. ulceration through before the edges have united permitting an infiltration into the cavity.

We then bring the threads out of the external wound, after having cut one end of each off, and keep the knots directly at the bottom of the wound. We then fasten these down by adhesive plaster by which the intestine is prevented from retracting. We then close the external wound lightly, not tightly. If this external wound be long 3 or 4 sutures may be used leaving a wide interspace between them. By this the contents of the bowel will not infiltrate into the abdomen but pass out.

If the bowel be cut entirely across we apply the first ligatures behind where the mesentery is attached, leaving the knot of this ligature in the bowel, to pass off by ulceration with the contents of the bowell. Two ligatures may be enough but the back part placed in this way. We then apply 2 or 3 more ligatures around the other part of the intestine, and bring the ends of these through the external wound. We then bring the bowel to the bottom of the wound. This creates less

* It is more liable to ulcerate, and as it is left in the cavity from this there may be an infiltration of the contents. If it does unite then will be a stricture of the intestine and the patient die of colic or ileus.

irritation than the continued suture,* and of the contents there will pass, if not all through the external wound if they come out of the intestine, more than into the cavity.

We have 2 surfaces brought in contact in the intestine, a serous surface and a mucous surface. The mucous surface is apt to suppurate, but the serous surface is not so apt to suppurate, but will throw out lymph and adhere.

If the wound has passed so deep as to cut an artery of the mesentery or of some other part, and the part protrude, the artery bleeding we pass a ligature around it and introduce the part, leaving one end out of the external wound.

The omentum is often found protruding through the wounds in young boys, and but seldom in old persons being fatty and thick. When found this must always be put back. If the opening be small and this cannot be done, do not use probes to push it in but, dilate the external wound about ½ inch with a blunt pointed bistoury and then introduce it. When the protruded portion is dirty and torn it may

be removed by cutting it off. There is very little danger of hemorrhage in young persons from this.

Lecture 46th January 17th 1843. Stone

The high operation is performed by cutting into the bladder above the pubis. The old surgeons tied the penis and permitted the bladder to be overdistended with urine, before performing the operation by which the peritoneum was forced up out of reach of the knife. By this there was danger of spilling the urine out into the cavity of the pelvis, exciting irritation.

Cheselden considering the whole source of the mischief as arising from the infiltration of urine emptied the bladder, and immediately before operating injected into it barley water, considering this less irritating.

Lately it is found that both of these ways are liable to produce a fatal result. The first is dangerous from an accumulation of urine and overdistension of the bladder. When the urine is left out it falls into folds, and being isolated from distension it throws out a muco purulent secretion. It is more likely to become inflamed after being distended.

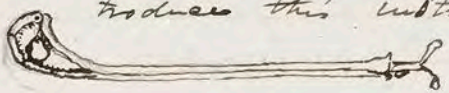
in the other

Now this operation has been improved by cutting into the urethra, and introducing a dart sound. This was forced against the upper fundus of the bladder, and pushed beneath the parietes above the pubis. As pushed up it forces the peritoneum above it. The dart is then forced through the parietes over the pubis. A lithotomy is then inserted along the sound, the body of the bladder cut and the stone withdrawn. It was thought this operation would be adopted. I at one time thought I had made an improvement in it. I emptied the bladder of urine and washed out the dregs with water. I introduced a common catheter or sound curved through the urethra, thrust it up above the pubis and cut down on it from over the pubis. I then introduced my finger on the instrument and enlarged the opening extracting the stone.

The circumstance renders this operation above the pubis very easy. The rectus and pyramidalis muscles come down on the front of the pubis, and not on the top as described in the books. We have a wide

space between these and the peritoneum which is filled with cellular tissue.

I take occasion to show you the different instruments used for breaking the stone in the bladder. We introduce this instrument through the urethra closed,



after having dilated it with catheters or bougies to a sufficient size. We strike the stone with the side of the instrument, and still holding it aside we gradually open it and place it over the stone. We then use the screw power to brake it down. We then withdraw the instrument, wait a few days and introduce it again. This instrument cannot be used with the same freedom the other can, and it is always according to my patients feelings more painful.

This instrument has a male and female blade, the one introduced in the groove of the other. This is introduced through the urethra closed. It is better than the other instrument as it may be turned to any part of

the bladder. The stone may be seized in the lower part of the bladder by turning the instrument down. It has the advantage over the other instrument in cases in which the stone is too hard to be broken by the screw power. We can in this case with this instrument hold the stone in the centre of the bladder and employ percussion. We can with this break the stone into detritus more readily than with the other.

Lateral Operation. This has been supposed to be an incision into the bladder itself. The prostrate gland does not lie at the very lowest part of the bladder. This operation really consists in this. We begin the incision at the bulb and carry it off laterally to the left side of the prostrate.

I tie the patients ancles to the wrists and hang the parts over the edge of the table. I tie these more to keep the knees apart than to overcome the motions of the patient. These can easily be restrained by two or 3 assistants. I introduce then a grooved sound into the bladder through the urethra. This is held firmly by an assistant, who keeps the instrument perpendicular

I then make the first incision 2½ or 3 inches in length, commencing it at the bottom of the scrotum and carrying it downwards and outwards in the direction of a point midway between the tuberosity of the ischium and the anus, cutting to our right and the patients left. I carry this incision down on the triangular ligament which separates the superficial from the deep parts. I carry the incision first deep under of the bulb which however I do not cut as these parts are vascular and would bleed. In this incision I cut the transverse perinei artery, which, I out of 10 cases requires no ligatures. I then see the transverse perinei and transversus perinei alter muscles, which I cut through down on the triangular ligament of the urethra. I cut through the triangular ligament below the bulb and in front of the anus and then feel the groove of the sound. I then cut through membranous part of the urethra, and fix the bistoury in the groove of the sound and pass it into the bladder. I pass in the finger, draw out the sound, and if I find the opening is not large enough I cut farther downwards with the bistoury. I then introduce a forceps, seize the stone in its short diameter, which may be done by seizing it several times

and then withdraw it. The advantage of this over the high operation is that it may be performed in diseases & strictures of the urethra.

Lecture 47th. January 18th 1843.

Calculus diathesis or a disposition to urinary deposite.

1st. This is what may be called a nervous diathesis, in which there exists nervous derangement. Once in a while in persons from sedentary habits, and from living in ill ventilated departments, there will come on an irritable state of the bladder simulating stone. The bowels become costive, the patient becomes dyspeptic, complains of sick head ache, and pain in various parts of the body. Finally he will present symptoms of irritable bladder; pain in the urethra and pain and difficulty of micturition. These cases are common. They are more numerous than those in which stone exists, and have deceived many surgeons.

The most remarkable peculiarity is that they have been afflicted with many other diseases. They do not simulate the disease but firmly believe they have stone. Ask whether they experience pain from active exercise, they say "yes". Ask them if they have difficulty of micturition they say "yes" Ask if a sensation of rolling in

the bladder they say yes. They have pain in the glans penis, retraction of the testicles; indeed all the symptoms simulating those of stone in the bladder. So near indeed are the symptoms to those of stone that many practitioners will be deceived. After several soundings these symptoms have continued, and practitioners of more experience than myself have been deceived.

Case.— I had the care of a patient of nervous irritability produced by asphyxia from carbonic acid gas from charcoal. Persons are very liable to have derangement of the nervous system from this gas. The late Dr Chenle after recovering from an almost asphyxiated state produced by this gas, perspired only on one side of the mesial line of his body. His patient after having gout, rheumatism, angina pectoris, hysteria, thought he had stone in the bladder. Many surgeons gave countenance to his complaints. I sounded and decided no stone was there. He always answered our questions, and described his feeling as if there was a stone in the bladder. Upon asking him he stated he had rolling in his bladder, pain in the glans penis. He stated the pain was greater after emptying the bladder, which surgeons say distinguishes the irritable bladder from one in which there

is a stone. He would complain of bloody discharges, and the discharge was said to be said by surgeons who examined it; I examined it closely and found it only a sedimentitious deposite in the urine. I sent him to the Springs. Because I would not operate he considered me the most sceptical of all men. After 5 or 6 years he came to the lecture room pestering me at a time when we had a subject with small pox. He took this disease and suddenly died.

I examined the body and found no symptoms of stone. There were no symptoms of inflamation or no organic affection of the bladder. On the contrary the bladder was pale. The only sign of disease was a small patch on the auricle of the heart, and a small enlargement of the top of the 12th rib, at which place he had often complained of pain, and from which I had given temporary relief by blisters. There was no trace of disease in any other parts of the body.

I might go on and give enough cases to almost explode the idea that the stone is sometimes encysted in the bladder, in which cases no click is perceived while sounding. I have cases of this kind almost every week.

Whenever in such cases the urine is pale, or ex-

ibits only the common sediment, I always suspect the stone does not exist, and if not found upon sounding I decide that it is only the calculus diathesis from nervous irritation.

I put these patients on alteratives, laxatives, a well regulated diet and send them into the open air, or to the springs. I make them take active exercise and keep them continually employed.

In cases in which the urine is habitually loaded, high coloured like brandy, and throws down upon standing lithic acid, or especially if sandy particles are passed, we have what constitutes the lithic acid diathesis. His deposite may be free lithic acid, or the acid with its salts. We may always suspect in this case the existence of a stone. These may exist in small particles in the bladder especially in the lower fundus. If this progresses these may enlarge.

In such cases if not sufficiently large to click upon the introduction of the sound, and be felt in the rectum, it is gravel and not stone.

By dilating the urethra and giving diuretic drinks we may expel all the particles. Such as do not come away

may be removed by an operation.

In these cases the patients must avoid all acids and drinks and fruits and all irregularities. I give blue pills with aloes and rhubarb to restore the secretions, and then alkalies. The supercarbonate or bicarbonate of potassa or soda are the best forms. The aqua potassa is too irritating and I do not believe in its solvent power (even the stone.) I do not believe any remedy has this power. Of the bicarbonate 20 to 60 grains may be given 3 times a day in a tumbler of Seltzer water with mild diuretic drinks. Of the diuretics the Erigerons are the best. (Of these I use the Philadelphicum, Canadensis and Heterophyllum all equally good.) At the same time I keep the bowels regular and give blue pill.

As long as we pursue this treatment, the deposits will subside. At all events there will be no increase. At the same time I dilate the urethra by means of bougies, and bring the lower part of the fundus of the bladder in a depending posture so as to permit the sediment to pass. If we dilate the urethra with bougies, to full size, and give diuretics ~~they~~ particles may pass almost always. I have had them pass the size of the first phalanx of the finger.

I have known them pass of an oblong shape (~~the length of the first and half of the second phalanx of the finger~~) By taking advantage of this we may always pass gravel and small calculi

In gravel the urine is always red and throws down a sediment; there is no mucous discharge and the urine does not smell strong after standing.

This treatment is useful if we can not get the discharge of large stones. If large stones exist, by it we get the system in a condition to be operated upon. Before operating we must always correct the morbid derangements which exist as far as possible, and the remedies prescribed for the lithic acid diathesis are the proper ones for this purpose.

The next diathesis is the phosphatic, of which there are many varieties, and which is the most unfavourable of all. We may have a discharge from the bladder, in this diathesis, of matter, as in catarrh; and we may have it from foreign bodies, as pins, needles and the like, which have been swallowed, and find their way into the bladder through the bowels, where they create inflammation and suppuration. The discharge in this diathesis consists of

× after I have corrected the secretion by alteratives, cascarilla and given diuretics.

a glairy, ropy, tough viscid mucus which will adhere to the bottom of the vessel in which it is passed. The vessel may be turned upside down and this will not run out. Frequently almost the whole discharge consists of this. In connection with this there is a pasty, white looking calcareous substance like chalk or lime which settles to the bottom of the vessel. In some cases this does not occur. We may have a discharge of nothing but mucus; sometimes pus mixed with ~~mucus~~ gelatinous mucus. At other times we have this which settles to the bottom of the vessel where it may be collected. From this circumstance it has been called pasty calculus. This is secreted by the bladder and does not come from the kidneys. The urine in this is always of an alkaline character staining turmeric paper, and smells of ammonia. I have operated upon a patient for stone and had the wound plugged up with this paste.

I have cured this by the nitric acid* diluted.+ In all cases which I have met with this alone has been effectual. I have cured patients with it, who, after several years have had a return of it, which I have cured (or cured) a second time. It may be put in water with loaf sugar and sucked through a quill to

× May give 10 to 30 drops 4 to 5 times a day

° alkalies, alkaline earths and magnesia exasperates this disease. If acids exist in stomach magnesia may be given to correct this - but only for this. If the dose be increased the disease will be exasperated.

avoid injury of the teeth. The patient may take as much as he can bear.* He should (of food) use such as he can take and digest. At the same time warm baths may be used and the urethra dilated to allow the passage with ease of the slush.°

In some rare cases of overdistended and paralytic bladder I have had more difficulty. I then introduce the catheter every 3 or 4 hours until the patient learns how to do it himself, drawing off the urine, so that it may recover its tone. If no disease of the prostate exist here, or there be no calculus in the bladder, it may be overcome.

If strictures exist or an irritable urethra, the instrument may be introduced, armed with lunar caustic: not to burn these parts but merely to smear them.

If a stone exists at all events, it is our duty to overcome this condition of the bladder. Nothing is more dangerous than to operate on a patient, with a thickened and irritable state of the bladder. In this disease the kidney is not in fault. It begins in the bladder and continues there, and is owing to a chronic inflammation of this organ from which it throws out the slaty matter

as the gums do tartar in a state of chronic inflammation. It is secreted from the coats of the bladder and is not a deposite in the urine.

A stone may cause this inflamation from which we may have this phosphatic deposite around it. In this way we may have a highly compound stone formed. And in the same way we may have the phosphatic supervene upon the lithic acid diathesis. We may have the phosphatic overcome then have the lithic acid again, until inflamation is excited and then again the phosphatic. We may have from this first a lithic acid calculi, then a phosphatic deposite, then over it a deposite of lithic acid, then again the phosphatic deposite.

Whenever a stone is found on sounding, before operating, the healthy secretions of urine and of the bowels must be restored and the irritable state of the bladder removed.

Sounding. The most of surgeons use too highly curved sounds. The prostate is not at the bottom of the bladder, a considerable portion of the bladder lying below it. From this a stone may lie below ~~the~~ the instruments. With these instruments we can feel the upper part of the bladder but not the lower

the instrument passing over the stone. These instruments may be used almost straight.

I have known surgeons search and search in vain for a stone, forgetting to put their finger into the rectum, by this we can push up the stone and then we can hear the click produced by the sound striking it. The finger should always be introduced into the rectum while sounding.

The patient should be sounded in all positions, standing sitting and lying. He should be sounded while on his knees; and with the head down and extremities up. The should be turned while sounding to bring the stone in reach. In corpulent persons we must push alone the pubis, while sounding. The rectum in old persons is overlapped by the bladder, forming on each side a cul de sac in which the stone may be lodged. We then inject into the bladder flaxseed tea to distend it.

When we have failed in all these means I take a strong silver catheter and introduce it in a distended state of the bladder. I then move the patient about permitting the urine to flow through the catheter. As the bladder is emptied the stone is brought down upon it. I have succeeded by this when all other means have

failed.

Sometimes by long sounds forcing them high up in the bladder we detect the stone. This was the way in which the stone was detected in A. Reigart. In his case it was lodged high up in the bladder and to one side.

As regards the chemical characters of the stone, little benefit is derived from a knowledge of them. A stone may be lithic acid at one time and from inflamation of the bladder it may become phosphatic. In compound stones we may have alkaline earths and sometimes magnesia. The only way is to get at the secretions of the kidneys and of the bladder in are inflamed and in a non-inflamed state. They are more easily arranged under the 3 forms mentioned.

In the phosphatic diathesis we may have the phosphate and carbonate of lime and the triple phosphate combined. When there is pure phosphoric acid there are chrystals of brownish colour, from which this has been called bone earth calculus. In the pasty sediment there is generally a mixture of the phosphate and carbonate of lime. In the triple phosphate there are chrystals like those of calcareous spar.

Lecture 18th January 19th 1843. — Crushing. The operation of crushing is now performed by these 2 instruments Jacobs' & Heurteloups. If the stone be the size of a hens egg or under, it may be broken by Jacobs' instrument. If larger it cannot be seized by this instrument and if hard we cannot cleave it by this instrument — but with Heurteloups this may be done.

I would advise yous to confine yourselves to the use of one instrument, as you cannot become accustomed to use all the instruments with freedom and safety. With Heurteloes' instrument it is impossible to catch the mucus membrane of the bladder which is often thrown into folds. which we are liable to catch with Jacobs instrument — and with it we can catch a stone in any part of the bladder. When we cannot crush by the screw power, with it we may crush by percussion. If large, we can break the stone when it cannot be seized by the other.

(This instrument is liable to break in crushing the stone. I had a case in which this instrument broke the piece remaining in the bladder. This also happened in a patient operated upon in France, in which the piece was removed by the cutting operation. I was more

successful with my case — I got the piece out by dilating the urethra and bending the patient forward to favour its entrance into this passage.

Operations for the removal of the Stone devised in the different States of the Profession.

The first operation for the removal of the stone was that of introducing into the rectum 2 fingers under the lower fundus of the bladder. By these the stone was felt and brought forward and grasped, an incision was made down on it, called "Cutting on the grip" and the stone extracted. This operation of Cutting on the grip was called the minor operation from the few instruments employed in it and was confined to children of about 14 years and under. In adults males being higher it could not be reached so as to be forced within the grasp — not only this but the parts are more vascular from cutting which, they might, the more endanger the life of their patient.

After this we find traces of improvement in the operation, it being made fit for all subjects, adults and children. This, from the greater number of instruments used in performing it, was called the Operation Major. They used a

staff with a groove in it which was introduced through the urethra, and thus made an incision down upon it, in the membranous part of the urethra — then a common grooved director was passed from this into the bladder, forceps were then passed and forcibly dilated to enlarge the passage. These were introduced of a larger and larger size. After stretching these parts, they then passed a gorget, concave on one side and convex on the other, and of the wedge shape, increasing in size from the point upwards, along the concave side of which they passed a forceps; They, thinking that cutting in the bladder was fatal to the patient. They introduced forceps along the concave side of the gorget, stretched open and dilated the parts, seized and extracted the stone. They forgot that they tore the bladder in this operation — that they ruptured the membranous part of the urethra, prostate gland, and lower fundus of the ~~organ~~ bladder

This was improved by Marius and Johannes Romanus, and many other surgeons, one using more forceps and the other more gorgets.

This operation was often fatal from the dilating tearing and lacerating mode of performing it.

A surgeon in the South of France of great ac

guirements named Franco modeled this operation. Seeing the violence and pain of this operation, and hearing the screams and shrieks of the patients he thought it better to cut these parts. He used, for this purpose, what was called a razor. He made his incision in the perineum and cut to the left side (of the patient.) He used a sound cut through the membranous portion of the urethra, on the left side of this part, and then cut with the razor along the sound into the bladder. He performed it exactly as it is now performed, only using a simpler instrument.

Having several times performed this operation with success, he met with a patient, a boy, on whom he performed it, and found the stone too large to be extracted. Seeing this he asked the parents of the boy to allow him to cut above the pubis for the stone (which they allowed). He cut above the pubis, extracted the stone. This was the first high operation performed for stone. He published an account of this case, and in the statement apologized for what he had done, but asked if it would not be a good plan to use this operation in preference to the other.

This high operation was then performed by Douglass, who first tied the penis and allowed the bladder to be over

distended with urine to force the peritoneum high up, and by Cheselden who distended the bladder by injections. Being overdistended before the operation and sudden relaxation taking place when it was cut, it fell into folds and was liable to suppuration and mortification.

The (old) surgeons in the hospitals still performed the operation of stretching and tearing the parts. Frasco an empiric and former servant of Francois induced them to let him perform the cutting operation, which he did before them. He plunged a dagger through the perineum, or sent it home to the bladder as Mr Bell calls it, introduced a forceps and extracted the stone. The boldly introduced the dagger as he had seen his talented master do, and his operations being followed by success, the surgeons were compelled to receive Franco's operation.

He was compelled to study anatomy by the Court of France after which, in his operations he very seldom succeeded. He dreaded the operation then from his knowledge of the situation of the parts and their vascularity, as is frequently the case with persons. They can dissect and demonstrate on the dead subject, but are afraid to cut the same parts in the living.

In this way this operation was received and performed, and it has remained with little modification to this day. The gorget has been used which is introduced in the groove of the sound and inclined parallel to the ramus of the ischium. In this way we avoid cutting the ischiatic artery and the rectum which will be cut in cutting downwards. In this too we avoid cutting the vesiculae seminales and the blood vessels of the bladder from which there would be hemorrhage.

Now we do not think of using a gorget. This is a clumsy instrument and not easily handled. I have tried them on the dead subject and have never been satisfied with them. I have always used a scalpel or bistoury.

<u>High Operation.</u> Strange after all the modifications and improvements made in this operation, the success has not been parallel to the improvements. 2 out of 25 in the hands of Cheselden and Douglas died. All who adopted the low operation have not had the success of Cheselden. Out of 5 or 6 in this operation 1 has died. In some hospitals 1 in the number have died. This mortality must be attributed to the foul air of these hospitals and to the

subjects which are found in them. In England the loss has been 1 to 5. In France in the private practice of the surgeons they have lost 1 out of 10. We must allow that one out of 7 has died from the low lateral operation, whether done by the high lateral or double lateral, or by the gorget scalpel or lithotomy. With Cheselden the high operation has been more successful than in any other hands which must be attributed to the fact that cases for the operation were selected.

The high operation ought to be performed with an empty state of the bladder — having it free from urine. When done in this condition it is more successful than the low. The question has been to adapt it to particular cases. No one should confine himself to any one operation. We should not confine ourselves to cutting for the stone or to crushing the stone. — or to cutting above or below for it. We must conform to the condition of the patient. The plan is to sum up the number of deaths in your or my hands and not in hands of all together.

When there is a disease in the urethra, a stricture or fistula, which must be overcome by an operation

on the urethra, there can be no question but the low operation is best as it removes the stone and disease at the same time. When the perineum is not deep as it is in thick subjects, this is not a very dangerous or a very difficult operation. When we sound the rectum as we should always do before operating, and see that the parts are not deep this is not dangerous — and especially so if we take the pains to remove all plethora, allay all irritation, correct the secretions and get the system in a regulated and easy condition. It is impossible to grind the stone in cases of strictures of the urethra and disease of the prostrate.

In old men in whom there exists disease of the prostrate, in consequence of which we cannot introduce the lithontripter, or when introduced we cannot move about freely — it is impossible to grind the stone. In those who could not pass the urine, and the bladder had become overdistended, and when drawn off it had fallen into folds or ribs of mucous membrane, lithontripsy cannot be employed. The instrument would catch in these folds and tear them.

We are then driven to the high operation for the removal of the stone, which operation is not only simple

but unattended with any great danger. The incision is made in the linea alba, where there are no vessels or no nerves. The only pain which is experienced is that upon cutting through the integument. The stone can be reached at any part of the bladder. This operation performed in this condition and in this way will be safe, and cannot be exploded.

In patients with stone, lithotripsy can be employed in about 7 out of 10. When the urethra is contracted or when there is a stricture in it, where we can get in a bougie of 1 inch in circumference, we can introduce the crusher. When this can be done it should be employed. Out of 10 patients 6 or 7 can be operated upon by crushing — 3 or 4 by the lateral operation — 1 or 2 by the high operation.

Any man who says he prefers any one operation is not a surgeon but an empiric.

Lecture 19th January 20th 1843. — Hernia. This is divided into 3 classes according to the State or Conditions of the external parts. These Classes are reducible, irreducible and strangulated, all of which may be known from the external Condition, even by persons unacquainted with the anatomy of the parts.

Reducible Hernia. This is the most simple and most ordinary of the 3 Classes or forms which may presents itself to us. It is called reducible hernia because it may be spontaneously reduced by the patient assuming a lying posture, or in other postures can be reduced by the hands of the patient. The bowel is lodged in a sack — the passage of the fecal matters goes on through it well — and the Circulation goes on in the part. There is no pressure, no stricture or no confinement of the bowel. The patient Complains perhaps of only slight pain from the tumour, and is troubled with slight colic which is trifling, and is easily relieved by returning the bowel into the abdomen.

All we have to do is to see that the protruded part is replaced in the Cavity of the abdomen. This may be done by the hand or it may be done by the patient lying down. We then apply a band or truss to prevent

* This will almost always of. a cure in from 5 to 8 weeks. We must not expect this by adhes. inf. but by allow the parts to contract, and by the restor. of the gen. health – the sec. &c

them from coming down again.

There are a great complication of trusses. The old surgeons merely used a pad which allowed the intestine to come into the upper part of the canal. This instead of effecting a cure prevented it. They thought that a perfect or radical cure never could be effected. They used this to support the parts and left their patients to wear it for life.

Hull has invented a truss for the radical cure of hernia. This truss passes around the sound side and over the canal of this side and is applied to the inguinal canal of the other. For umbilical hernia there is a modification of this instrument. In inguinal hernia this instrument has proved most beneficial in my hands, but in femoral hernia it cannot be used, the crural canal being too low down for this truss. With this truss I have seen more cures of inguinal hernia than with any other. I have had a radical cure effected by it in myself, my brother, and in my father in law. I was radically cured by it in 3 weeks. I have since taken the most active exercise with no return of it.

When the rupture is large, and the rings are of large size I would recommend Dr Chase's truss. The

* This is more lia. to obtain. than reducible.

block is made of wood which is oval and does not irritates. The shape and position has been to the shape of the inguinal canal. It presses upon the whole course of the canal, and thereby prevents a concealed hernia taking place. Hulls truss will in large hernia allow the bowel to enter the ring at the upper part. Chase's closes the the whole canal.

Dr Chase has invented the best instrument for femoral hernia. The pad has been shaped to fit in the hollow of the thigh and fill up the whole crural canal. All others have been made to press on Poupart's ligament which is not the proper place.

His umbilical truss answers as well as any other, but in fat corpulent persons it will not keep its place. In these the best is the old exomphalos truss of Hey.

Irreducible Hernia. × There is this difference from reducible hernia — that it cannot be replaced in the cavity of the abdomen — still it is not strangulated. The ring does not press upon these parts so as to impede the passage of the contents of the intestines or of the blood in the blood vessels. The stricture is not

sufficient to dam up the vessels and (~~render the passage of the contents torpid, and~~ (~~is not sufficient~~) to prevent the peristaltic action of the bowel on their contents. If the patient lift heavy weights or take active exercise there is danger from an additional quantity of viscid feces, or more blood in the bowels. He should therefore avoid this and avoid all indigestible or choleic articles of food, as turnips, carrots and beets, by doing which he may live with little inconvenience for many years.

A hernia may be irreducible and not strangulated, but a strangulated hernia is both irreducible and strangulated.

In the first place the bowel may be irreducible from the size of the contents, which cannot be returned by the peristaltic motion of the bowel or by pressure without. (~~Then by the tassels from the enlargement we cannot return even if no adhesions exist between the outside of the bowel and the hernial sac.~~)

Large portions of the omentum in the hernial sac, which become irritated and grow to a large size may prevent the hernia from being replaced.

* particularly femoral, in which he is prevented from walking, and kept with his body bent forward. I have operated in 3 cases of fem. her. of small size contrary to rules.

Adhesions may prevent a reduction of the hernia. Slight inflammation occurs just sufficient to produce adhesion – then the contents adhering to the sack prevent a reduction either by the patient lying down or by force.

Another cause may be, when the caecum comes down. Being behind the peritoneum it comes down destitute of a peritoneal coat and then the bowel itself adheres. This is destitute of the slippery nature of the ~~serous~~ membrane surrounding other hernias, from which it very readily unites.

The ~~idea~~ question arises, if any operation can be performed to rid the patient of his inconvenience and deformity. It is obvious that we cannot succeed in ~~returning~~ returning the contents, unless we lay open the whole sac, unriddle the whole of the intestines, and remove the hypertrophied coils of ~~peritoneum~~ peritoneum. If the omentum be returned in so thickened a state it would endanger inflammation in the abdomen. To open so large a sac and by cutting and tearing away the intestines we would endanger life. I think never would be justified in operating when the hernia is large. Only in a few cases, when the rupture is small, and the patient is obliged to perform labour for his subsistence

and this prevents him from laboring we are justified in operating. When small there is not so much danger. When large it is too severe and for a change of benefit the patient never should submit to the operation. but submit to the inconvenience. They should wear a support and by this prevent additional descent. They should not lift heavy weights and should be content with moderate exercise. They should take laxative medicines to keep the bowels open - having at least one passage in 24 hours and avoid eating turnips beets carrots and all other cholick vegitables. They should eat broths, mush and the like.

Sometimes we meet with a person who must labour for the support of a family. In such cases we should reduce the protruded parts if possible. We put the patient in a recumbent posture with the head up, with the legs flexed on the thigh and the thigh on the body. This relaxes the abdomen, enlarges the cavity, and presses up the rupture. We then put the patient on low diet, giving only gruels, or bread and water, give laxatives and occasionally draw blood. Under this absorption is brought about by which the thickened omentum is made small and the adhesions removed. It is a law in the animal econ-

ony that all hypertrophied parts will be called on first to supply its wants. In 3 or 5 weeks the tumour will feel lighter and softer. Then we may use the manual effort or taxis, endeavoring 1 a day by proper force and by a proper direction of the force to effect a reduction.

If inguinal the bowel coming through the canal the pressure must be made upwards, outwards and backwards. Always make the force in a direction the reverse of that which the bowel had taken. Great pains must be taken not to irritate the parts in attempts at reduction. We must take the palmar surfaces of the fingers and serve the intestines and work them from side to side and in the direction opposite to that in which they have descended. Endeavor to force out the contents, which we may hear sometimes passing with a gurgling sound. If you find no impression has been made then intermit. Wait a few days and try again. In addition to this cloth may be applied under the tumour and pressure made upon with plates. Over these plates I sometimes use evaporating lotions. In this way I have frequently made the bowels return and the patients have afterwards taken active exercise.

Femoral. This is generally not of large

ize. To reduce this we must pull in a different direction — first backwards, then upwards. Sometimes we must downwards, then upwards

By far the majority of large irreducible ruptures are inguinal.

I have reduced an inguinal rupture in this way and after it found my patient worse. I felt the large coils of omentum rolling about in the cavity of the abdomen. These kept up pain and gave rise to occasional attacks of inflammation. There appeared to be no place for them. This state lasted for 5 years, at the end of which time a rupture took place in the linea alba, just above the linea transverse for which I had to operate. He got over this and since then, these have been reabsorbed

If a large coiled up tumour of the omentum protrude, I should prefer using a suspensory, to returning them (~~the parts~~) to the cavity of the abdomen.

Lecture 50th January 23rd 1843.

Strangulated Hernia This is one of the most dangerous and interesting subjects of which we can treat. The idea that it is a tight encircling of the ruptured parts followed by pain, inflamation and mortification which requires opium & blood letting, and if these fail we are driven to an operation, comprehends all that is said on this subject.

The usual course is to bleed in these cases till fainting is produced. In feeble and prostrated and cold states of the system this plan might prove fatal, the system being unable to react. Having relaxed the system by the bleeding they then resort to cathartics which they think tends to draw back the bowel. Then knowing the emetics produce relaxation they give these, after which, if the patient throws up stercoraceous matter, they become alarmed and give opiates. Under this the strangulation ceases to give pain while the mischief still goes on. They then refer to books and give the tobacco injection. Under all this they have failed and then they come to me and ask what I give for a strangulated rupture.

I give every thing for the condition of the system. ~~I do not~~ for strangulated rupture. We must come down

to the condition of the parts and the condition of the system. The strangulation of a bowel produces a great variety of symptoms, which require a great diversity of treatment.

There are 2 great classes of symptoms which arise upon strangulation. In one, met with in a person not ordinarily plethoric, and not liable to febrile excitement, a rupture forced down suddenly and tightly encircled is attended with violent pain and nervous irritability. The patient too is cold, feeble and pale.

When the patient is of a full habit, the arterial predominating over the nervous system, when a portion of the bowel is forced down, either alone or with a portion of the omentum, constituting an entero-epiplocele, there are symptoms of excitement presented to us. There is great vascular engorgement followed by local inflamation, a hard and tense pulse, a dry tongue and dry & hot skin and drying of all the secretions. (In this case an inflamatory state seems.)

These conditions, in these 2 states of the system, occur

In the one, where there exists pain in the abdomen, heat, and a drying of the secretions, the course is rapid. The inflamation unites the parts to each other and then runs onto mortification.

In the other, in which cholicky pains and nervous irritability exist; in which (there) there is debility and a cold state of the system, there is a want of tenderness. The patient may exhibit a state of prostration and sinking, which is from indirect debility. In this case mortification will not occur.

I will give 2 cases to show these 2 states.

Case 1. A gentleman stout and vigorous person, started from New York in a steamboat in pursuit of a thief. He was highly excited at the time he left, and on the way fed himself up by drinks and stimulating food. When he got to Elizabethtown he made fight in the stage; in jumping out of it, he felt a rip in the groin. This was about 11 o clock at night. He never minded it at the time, got into the stage again and continued drinking until after day break. At this time he was unable to stand erect. He was brought to my house. His face was red, his pulse tense, hard and corded, and his skin and tongue dry. I examined him and found a small tumour about the size of a pullets egg at the inguinal ring. The symptoms indicated inflammation and fever. He could not bear pressure upon the tumour. I opened a vein and finding this blood from this would not produce fainting,

opened the vein in the other arm. By this I brought on fainting which relaxed the system and brought on perspiration. The abdomen still remained (however remained) hard, tense and contracted. Finding it impossible to overcome by bleeding, and the case still (so) severe, I gave an injection to get an evacuation from the bowel, below the obstructed part, and had him placed in a warm bath, and then placed in bed. The warm bath seemed to do harm increasing the irritability. I now gave cool drinks and applied pounded ice in a bladder over the abdomen, and over the protruded part. After this he fell asleep and felt comfortable. While asleep I examined this patient and found the tumour had gone.

Muscular relaxation was brought about. The contraction of these (which) had forced out the bowels, and (which contracting) continuing, kept them out, but being thus taken off, and the peristaltic action of the bowels returning the intestines had gone up.

Case 2. A man, living in northern liberties, while moving an ash barrel from one place in the yard to another, felt suddenly a tearing sensation in the groin. The doctor in attendance, not knowing the nature of the case, sent to my

house stating it was the most curious case he ever saw. Being at supper at the time (with Dr Smith of Baltimore) I finished and then went up in company with him. I entered the house and found it in a frightful condition, the chairs were turned upside down, children's playthings thrown about the room; every thing indeed was turned over, but an old tea-plate stove. I found the patient jumping about the room and turning somersets. At one time his feet up in the against the wall and at another leaning over the table. I attempted to examine him, and he jumped up and ran from us and leaned with his groin upon edge of the table. I at length examined him and found the scrotum, large and distended, shining & transparent. There was no pain upon pressure either over the scrotum or abdomen. On the contrary it gave him great relief. His pulse was weak and feeble, and the skin cold and covered with a clammy perspiration. The muscles of the abdomen were opposite to relaxation — they were hard and bone like. We were all unable to tell the nature of the case from the symptoms, the syriform shape of the scrotum, its softness and transparency. I could feel only a slight fullness at the side of the spermatic chord. I put him in a warm bath and then

him an injection of flaxseed tea laudanum and gave him Opium & Calomel internally to allay the irritability. I then placed him (in bed) between blankets. I left him and left directions to let me know if far better. I heard nothing more from him and 2 days after went up, and found the tumour had gone down, showing it to be a case of rupture which had returned when the contraction of the muscles of the abdomen was overcome.

In these cases of cholicky pains and nervous irritability you may give injections of gruel with 60 to 100 drops of laudanum; and internally 2 grs of opium with 3 of Calomel every hour, with the warm bath until the symptoms are allayed.

I might give a great variety of cases, in which by treating the symptoms as they existed the hernia was overcome.

Where the hernia is accustomed to the descent, from having been down for a long time; and there is a large quantity in the sac, the rings are large, the colic not considerable, the abdomen large, full and bloated, it is difficult to class it under either of these heads. There is not so much depression as there is in the one, neither is there so much excitement as in the other.

In this state we may bleed to a moderate extent. This may be safely done by bleeding in a depending posture. ~~Laxative~~ injections may be resorted to – but not purgatives to excite the peristaltic action of the bowels below the strictured part. Then according to the state of the system, use cold or warm applications. If the patient be warm, use cooling applications. I prefer Whiskey and water with a cold application to the hernial tumour. By this we will cause the distended vessels to contract and shrivel up, and produce relaxation of the muscles, after which by the moderate application of the taxis we may return the bowel.

If the patient be cold I prefer the warm applications. The warm bath may be used after bleeding, heated to the temperature of blood heat, and then the patient may be wrapped in blankets. By this a complete state of relaxation is brought on and the patient perspires. He should then lie in bed with the legs (elevated) and the shoulders elevated, to produce relaxation of the abdominal muscles. Under this the cholic will be overcome. Having relieved the rectum by an injection, you may throw up an anodyne – 60 to 100 drops of laudanum. Under this the patient will perspire,

* May get a passage in hern. of oment. and may put off sy. mp. for some time by them. In strangula. of one of the appendices epiploicæ also, they may be useful. Another case is where only a small moose of the gut is strangulated, and the rest open. In these cases under the use of injections & purges we may get the contents down; but it is a bad practice to give them because the strangulation may be one of these kinds.

° and the rings are large.

relaxation of the muscles will be brought about, and he will fall asleep. Then we may return the protruded bowels. If large it may be raised up on pillows and pressure made upon it by means of pounded ice in a bladder.

The use of purgatives is improper except in old incarcerated hernia. — I apply the term incarcerated to hernia, in which there is an impacted (~~state~~) and hardened state of the feces in the bowels in the hernial sac, and not attended with a stricture, and in which state the patient may live for a number of weeks. This occurs in hernia of large size and long standing particularly, in which there is a loss of the peristaltic action of the bowels. I have always found castor oil, cremor tartar or jalap, or the compound colocynth pill, to answer, I have never seen a case in which there was stercoraceous vomiting in which the patient had not taken purgatives. I have never seen a case in which this vomiting took place in my practice. I have said there is only 1 case in which these are indicated. (~~this is in the incarcerated hernia of~~) When loaded with a mass of indurated feces in this, these may answer and even do good. You may

~~gives~~ the Compound extract of Colocynth 1 or 2 grains 3 times a day, or turpentine and oil, and every 1 or 2 hours an enema until we get the bowels to act. By this we often excite the peristaltic motion and relieve this state.

I have never seen large, solid feces thrown up; never, even where cathartics have been given (given). I will not say however, that the ileo-cecal valve is perfectly tight as some have said. It is a kind of fluid that is vomited smelling like a rotten egg. (There particular portions of the bowels are strangulated, and this strangulation of this particular part gives rise to stercoraceous vomiting was the opinion of some but I think it is a mistake.)

If we have produced relaxation of the abdomen and the parts still remain tightly wedged, so that we cannot effect a reduction under the use of the taxis, then I prefer an operation. We may wait for an hour after the relaxation has been produced before we operate.

As to tobacco this is only to be used in urgent cases. We only think of using it in these cases. After the patient has been bled, and warm and cold applications have been used, we still have straining and bearing down, and still have violent and tetanic con-

traction of the muscles of the abdomen; it is a most sovereign remedy. It is a very unpopular medicine, but under this state it can always be safely used. It must always be adapted to this state. In administering this remedy to a patient while suffering under pain and spasm, it will not overwhelm the nervous system. It expends itself in relaxing the nervous system. This remedy has been used too soon, before the system has become susceptible to the disease. When it is exhibited too late, when the bowel is mortified and the patient weak a small quantity will destroy life. When adapted to the state of the system it may be safely used.

I once had a case, in which the attendants pumped in infusion of 2 pounds of tobacco, up the rectum. I had operated upon this patient, and the contraction of the abdominal muscles forced the bowels further out, after the stricture was removed. I had an infusion made, and wished to produce relaxation by it. I left directions for using it and called back in 20 minutes, when I found they had pumped the whole infusion of 2 lbs. There was no nausea or no prostration followed. It overcome the contraction of the muscles and I returned the bowels. There was no need of using the antidotes for tobacco in this case; the best

remedy is cold air, cold drinks and cold injections of water, when tobacco depresses too much.

In ordinary cases tobacco is not required. When the fever is overcome, relaxation of the abdomen is brought about, and there is no pain on pressure, the tumor is unchanged, then is the time to operate, and it cannot be done too soon. If we operate before this is brought about we operate too soon. If we operate when the muscles are hard & contracted, there will not be room (~~lace~~) in the abdomen for the protruded bowels. Instead of waiting for 1-2-or 24 hours or 2 or 3 days to operate, we wait only until we have overcome these, and then we have only to overcome the stricture.

We now employ (when abdominal muscles relaxed) the judicious application of the taxis, which may be repeated for a reasonable length of time, after which if the bowels is not returned, we operate.

Lecture 57 of January 24th 1843.

The fascia superficialis abdominis (~~fascia~~) is the most external fascia over the abdomen, and separates the integument from the muscles. This is composed of ~~membranes~~ of lamina of condensed

sed cellular tissue, which by frequent handling, in cases of rupture, becomes thickened from the irritation produced. Some surgeons in operating for strangulated hernia cut directly through this upon the walls of the inguinal canal. I have seen surgeons work for half an hour picking up laminæ after laminæ of this fascia in a thickened state. I cut in operating, above the tumour and consequently above this thickened part, introduce my finger under it and strip it up. Having done this I come down on the ring at once.

The intercolumnar fascia, which closes the external margin of the ring, gives a covering to the sac as it comes down under it. (This covering constitutes the fascia propria of the hernial sac. It is only called fascia propria in femoral hernia. The reason is that the cremaster muscle forms, in inguinal hernia, an investment to the sac and neck of the sac. As this investment is of muscular and cellular texture, it is not called a fascia propria.) This covering is what we first come on in operating. Cutting through this we expose the ring. We introduce the finger into this and slit it up, and then we see the abdominal or inguinal canal. This runs upwards and outwards, and is about 1½ and in some cases

2 inches in length. (The anterior arch is formed by the tendon of the external oblique, and the internal by the tendon of the internal oblique and transversalis muscles.) We distinguish the internal oblique from the transversalis muscle by the circumflex artery which runs between them. (In this canal there are 3 arches. We have the superior border formed by the external oblique, a little above it the inferior border formed by the internal oblique, and a little above this another by the transversalis.) The very back part of the wall is formed by the transversalis fascia. Between the transversalis fascia and the peritoneum runs the epigastric artery. In this place it runs directly towards the umbilicus until it gets in the sheath of the rectus and then it runs parallel with its fellow of the opposite side upwards. If we do not cut deep, we do not get in contact with this. Horrible cases have been given by the old surgeons of internal hemorrhage from wounds of this artery, attended with syncope and collapse. By cutting directly backwards this might be cut; but if a blunt point bistoury be used, which always ought to be used in operating, this artery never will be cut. If the transverse fascia be the seat of stricture it may be cut, but then it requires a longer hor-

rible work to get at it.

The internal ring consists in an oblique crescentic hole in the fascia transversalis. Just below we have the fibres of the transversalis muscle, and lying up it is overlying by the fibres of the internal oblique muscle. The cremaster muscle does not come through this from the abdomen as the vessels do. But is made up below it in the ring from the fibres of the internal oblique and transversalis. The vessels of the chord pass through the fascia transversalis and meet with, at it a sort of condensed cellular texture which is the ~~internal Column~~ intercolumnar fascia. The spermatic vessels pass through descending to be covered by the fibres of the cremaster, which runs from within the canal downwards. Through this canal the bowels descend in inguinal hernia. In its progress it carries the epigastric artery before it. This is always found on the pubic side of the hernial sac. If large it causes it to encircle the neck of the sac by pushing it in still further. Still if careful we never will touch this artery. If we cut towards the umbilicus parallel with it we never will cut it. We may cut inwards, and if the knife be not sharp, or if sharp, if we do not made a sawing motion it will not be cut.

always in the natural descent of the parts we have the cremaster muscle in front, and the vessels and nerves behind the hernial protrusion. A protrusion through this passage is called (~~is called~~) Oblique inguinal Hernia.

Sometimes we have only a partial descent of the hernia. It protrudes through the internal ring, but does not come low enough to escape at the external orifice of the canal. The tumour bulges out making only an obscure hard bump in the course of the canal. It is a tumour of the canal. From this it has been called Concealed Hernia. Many patients, particularly corpulent persons, have died, with this concealed hernia unnoticed. It is as apt to terminate fatally as a complete hernia. In all cases of pain in the abdomen with colic and obstinate vomiting, and particularly if the pain be confined to one groin, you should examine these parts.

You should in operating cut down on the pillars of the canal, slit up the tendon of the external oblique, feel for the internal stricture, and cut it upwards and inwards towards the umbilicus.

Another hernia, which is said to be found in one case out of 20, but I do not think so often, is that in

in which the fascia transversalis gives way between the epigastric artery and pubis. It comes out through the fascia makes a tumour like a button under the integument and superficial fascia, and comes out on the inner side of the artery. From coming directly through it is called the direct descent. It is directly behind the external ring. In this form we never have an internal stricture as there is no canal. A man after rolling a hogshead, lifting heavy weights, or tapping will have this give way sensibly. The greatest points of difference are that it is on the inner side of the epigastric artery and that it comes directly through.

The distinction between the fascia transversalis and iliacus f. is this. The transversalis fascia arises from the internal edge of Poupart's ligament and the pubis behind the insertion of the muscles and runs upwards on the posterior face of the transversalis muscle. The iliacus fascia lies internally over the iliacus and psoas muscles. The 2 fascia meet at Poupart's ligament, the shape being, in the body, that of an inverted part of a funnel, the tube part of which is the crural canal, in which runs the crural

vessels. (~~The thigh covered by the fascia lata which sends off~~ 2 layers: 1 over the front of the vessels, called the iliac and another on the posterior face of the vessels, called pectineal. The pectineal is continuous with iliacus fascia. Poupart's ligament extends from the ant. superior spin. process of the ilium to the crest of the pubis. The part next the pubis has a doubling in of a crescentic shape, which is attached to the spine of the pubis; this is Gimbernat's ligament. We have the femoral ligament of Hey extending across the canal, to which is soft and yielding and is never the seat of stricture.)

Lecture 52nd January 25th 1843. recent hernia

Strangulated Hernia. – Direct descent. Operation. Make an incision an inch and ½ in length, through the integument and fascia superficialis, down on the tendons of the external oblique. This incision is made over the neck of the hernial sac. I ~~carefully~~ expose the fibres of the Columnæ carnea of Winslow which I slit up a little and the external ring a little. I then introduce my finger, ~~as a~~ guide, use the Blunt point bistoury, and slit up the stricture, dilating it without touching the hernial sac. Then if the parts lie loose I introduce them.

In this hernia, we are generally called in directly after it has taken place. From the sudden feeling of something giving way, and from the violence of the pain and colic, we are called in. And by this it is prevented from reaching a large size. It is not as in the oblique inguinal which sometimes come down gradually and we are not called in until it has reached the scrotum. From this being small and bottle like I do not cut the sac but return it into the cavity. Only when the patient is cold, weak and pulseless, with a distended abdomen - symptoms indicating mortification, do I open the sac or when there is reason to apprehend stricture in such a sac.

<u>Oblique Inguinal</u>. Operation. We may have the stricture at the internal ring. I slit up the parts over the neck of the sac down on the external ring. I feel in the canal for the stricture with the finger and introduce a blunt pointed bistoury, or if this cannot be introduced a grooved director may be used, and slit up the stricture (with a cracking noise) towards the umbilicus. I only prep with the bistoury and do not make a sawing motion.

It might be asked why I do not cut opposite to the artery. The reason I give this is (because) you are not so apt to be confounded and because you are not confident of the descent.

In old hernia of large size where there is dragging the internal ring is brought down near the external so that it is hard to tell which is the internal. If you cut then, in the direction of the umbilicus you will always cut right; and there will be no danger, especially if the knife be not too sharp. I prefer a knife which is somewhat dull, by use, for cutting the fascia. If I push with it the fascia will give way, and if there be muscular fibres or other parts they will be pushed before it.

If the hernia be small and not old, we need not open the sac, but only slit up the stricture. I always aim at the ring first. Some surgeons cut down on the sac, see the blue colour of it, then cut it open and let the coloured fluid out. They then slit up the stricture. This is an unscientific, mechanical and uncertain way of operating. In all cases I cut on the neck of the sac, and feel for the strictured orifice. If I find it at the internal ring I slit this up; if external hernia, I feel for Gimbernat's ligament and slit that up. After this I can pinch up the peritoneum, feel the contents and roll it in my fingers. I can cut and slit it up and let out the fluid and unravel the contents.

If the rupture be old, and the bowel has contracted adhesions or undergone sphacelation, I then open the sac. The reason it is best to open the sac in old hernia, is, that we get rid of the danger of internal strangulation. When ever the hernia is old the sac becomes thickened. Authors speak of replacing the sac, but I have tried, & I only push in the neck.

There are cases in which the omentum is in the sac with the intestine, the omentum encircling the intestine, which may endanger internal strangulation, the omentum and bowel being adherent.

A portion of bowel forced through the omentum may be a cause of strangulation. Sometimes the omentum becomes torn in places and mixed with the bowel, and adheres at different places.

Possibly we may have the bowel give way at some part, either by mortification, or by force in returning it; or we may have a rupture by the injudicious use of the taxis. In this case we may have an effusion into the cavity of the abdomen.

The last rule is, when the bowel is long strangulated, to lay open the sac. If the adhesions are not old and extensive it is best to cut them across. If no adhesions are

out, when they are loosened, return them. If an artery be cut (be cut) & if it bleeds, it is best to put a ligature around it, cut off 1 end and leave the other out through the external wound. We wait until all oozing of blood has ceased before we return the bowel.

If the adhesions be large strong and bold it is best to divide the ring and neck of the sac freely that there may be no impediment, and treat it as an irreducible hernia, using a support for the parts.

In cases of rupture in which there is a large portion of omentum in the hernial sac, which is thickened or hypertrophied, as it is sometimes found - doubled up the size of the fist or of a hen's egg: in these the ring cannot be dilated to a sufficient size to allow it to go back in the cavity of the abdomen, and it would be dangerous to unravel the coyle. The question here is whether to cut it off, pass a ligature around it or leave it down. In all these cases, as in every thing else, we must be governed by the circumstances of the case.

If large, as I found it in 1 case, in which I perceived a gangrenous odour & unravelled it, of large size. I found the veins large and black and found that the

circulation through them had ceased, and the blood had percolated through them. When we unravel them (~~them~~), if we find the blood circulating in the veins, we may unravel large portions, and return them.

When small, if not still too large for the ring we may replace it.

If large, and having a narrow pedestal I prefer to cut it off. It would require too great dilation of the ring to replace it.

If it be large at the base, filling the ring, I prefer to let it down. We then close the wound over it by interrupted sutures and a compress, and it may then be absorbed. If adhesions exist these may be removed by absorption and it may go up. When we leave it down we keep the patient on his back for several weeks with his thighs and head elevated to keep (relaxed) the abdominal muscles relaxed

For the intestines, we must (~~draw~~ suit) the treatment (~~from~~ to) each individual case. All are apt to err on seeing a black looking intestine, or seeing in the sac a bloodsal or gaseous fluid, or a fluid like Coffee grounds (~~in the sac~~). The fluid is always colored and the bowel is apt to be dark. If we find it not rotten upon handling, then the vitality may be preserved by the nursing which it re-

*Many die after the operation, not from mortification, but from a paralysis of the muscular coat of the bowels, to remove which, I have been obliged to resort to mercurial alteratives, carried to gentle salivation, blisters, injections and in some cases magnetism, which had a good effect. This paralysis always acts to a sufficient extent to prevent the bowel from leaving the external hole when replaced.

cious, if I may so call it, upon its return into the abdomen. The old idea was to leave all black intestines out, and cover them with some soft application or fomentations, — the best of which when they are used is warm water — leaving them to slough. But this may consent an incipient into a confirmed mortification. If we replace any part even so dark, if it will bear handling, and bear the motion and force of putting it into the abdomen, it will do better thus if left out. Only in 1 case have I known the bowel when returned, turn out to be mortified. Then only after 15 evacuations from the bowels were brought about by laxatives did it give way, and the contents infiltrate themselves into the abdomen. When replaced, if mortified, a surrounding pellicle of lymph will have produced union of the parts, and the cavity be protected. We shall only have a cloaky state of this part of the intestine. × It is a fact too, that a mortified part will remain directly behind the external opening at which adhesions will take place, and if the bowel give way the discharge will be external.

Femoral Hernia. In this kind of hernia the bowel comes down behind the fascia transversalis, Poupart's & Gimbernat's ligaments. The femoral ligament (Hey's) is soft & yielding, and is not the seat of the stricture. From this fact we never cut Hey's ligament, but Gimbernat's, which is the essential and real seat of stricture. The bowel comes down always in a natural descent between the vessels and the pubis. If abscess exist, which has detached Poupart's ligament from the bone, there may be a diverticul but I have never seen one such case. The bowel comes down the canal and bursts through the cribriform fascia ~~in femoral hernia~~. If this fascia gives way then it comes boldly out. Often it ~~comes~~ rises up over Poupart's ligament in the inguinal region where it may be mistaken for this hernia, and the force to return it be exerted in the wrong direction. In this case we must first crowd it down below the ligament, then backwards on the pectineus muscle, then upwards along the canal. It does not always take this course. Sometimes it comes outwards and upwards: I once seen the tumour lodged in contact with the superior anterior spinous process of the ilium. Sometimes the cribriform fascia will not allow it to escape. It then passes down along the course of the tendons, under

the fascia lata, sometimes as low as the knee. We then have to press it all the way upwards.

Strangulated Femoral Hernia. — Operation. In femoral hernia we cut down on the neck of the sac. first. I begin the incision a little above Poupart's ligament and carry it down over the tumour. I then deepen the incision which interferes only (with) with the pudendal artery. I cut the fascia lata, insert the handle of the knife under it and slit it up. I then pass in the finger, feel for Gimbernat's ligament, cut it, directed by the finger with a blunt pointed bistoury, towards the umbilicus.

Lecture 53rd January 26th 1843

Congenital Inguinal Hernia. This is a hernia which children are born with, and which is confined to the inguinal canal, never occurring in the femoral region. It is a modification of the oblique descent. Owing to the fact that the testicle comes down through the canals, and brings with it a process of peritoneum, there is left a neck above and a pouch below, (~~above the testicle~~) This process constitutes the tunica vaginalis of the testicle. This generally closes after the descent of the testicle, and becomes a

separate membrane. If hernia takes place after this closes it is the ordinary hernia of the oblique descent.

It happens 1st while the foetus is in utero. From contraction of the uterus the abdomen is pressed, and a piece of the bowel is forced down, and being in the canal it prevents this from closing at birth. It may take place from a tight bandage around the child pressing the abdomen. It is a common practice with nurses to bandage the child, a practice which the physician should never allow. It differs only from the common hernia in having no separate hernial sac. The hernia is in contact with the testicle, and must always be of the oblique descent. It lies on the front of the testicle with a little fluid. If it become strangulated this fluid will become of a dark brown, dark green or coffee ground colour. I have never seen a case of strangulation of this form of hernia. It must be of the oblique descent, and with the artery on the pubic side.

This form of hernia is generally badly treated. Many think the patient must not wear a truss, and leave it with only a bandage ~~support~~. A weak truss may be worn. The old truss of Pasey is generally preferred, having strings under the perineum to keep it in its place; but Hall's truss may

may be used, and is the one I employ. If closed early with a truss, a radical cure can generally be effected in 3 or 4 months.

There is only one difficulty in the treatment of this form of hernia, which is in some complicated cases. Sometimes the testicle of one side has not descended, while that of the other side is down. The hernia may descend and the testicle remain up. It is then apt to enter the internal ring and remain in the canal. When we have this complication it is difficult to understand it. When we have returned the bowel, and feel a lump in the groin, and when the testicle is not in the bag we have this state. We must keep the patient on the back, relieve all irritation by leeches and purges. We then attempt to get it down. If it slips back upon attempting to seize it, we push it back into the abdomen and apply a truss to produce contraction and union. It will adhere to the back part of the ring.

Another is what is called <u>infantile hernia</u>, but this is not a correct name, and (which name) should have been applied to the other hernia. This is a species in which the tunica vaginalis is closed. The hernia comes in contact with the upper part of the tunica vaginalis.

where it contracts adhesions, and finally descends all the way down. It is an encysted hernia. If this becomes strangulated, in operating in the old way of cutting down on the hernial tumour we will be confounded, but in operating in my way we will not be confounded. When they have got through one they go on and cut the two processes of peritoneum. It is an encysted hernia of the tunica vaginalis.

There is another hernia of this form in femoral. We cut in one sac and find a fluid come out highly coloured, and then cut in another sac and find the intestine. In this form there is a previous protrusion of the sac with a narrow neck, and then another protrusion comes down into it. We open the first, then open the second and come in on the intestine. I have met with 5 cases of this kind.

Diagnosis of Hernia. Femoral Hernia is liable to be complicated with an enlargement of the deep glands lying along the course of the femoral vessels. The glands may be forced down and produce violent pain and irritation, and if the patient have colic at the time we may think it a case of hernia. Do these glands along the crib-riform fascia may produce a tumour like a hut-

tow which may be mistaken for a hernial tumour.

Wherever we are in doubt it is best to search by an incision. There is no danger in cutting down on these glands, and by the incision we prepare nature for the discharge of pus from them, which may take place in their inflamed state.

But I believe a good practitioner will never make this mistake. If it be a large inflamed gland, the symptoms are not urgent. We can employ depletion, laxatives and the like, when we will find it will subside. Where there is a femoral hernia, in which the tumour is small like a button, not passing through the cribriform fascia we are very apt to be mistaken. Where the symptoms are urgent cut down immediately. There may be a hernia with a gland below it.

In inguinal hernia we have a great variety of diseases with which it may be confounded. The disease of the cord called varicocele, is a common ~~sort~~ source of mistake. In this if you feel the tumour, it will press like worms between the fingers. If the patient lie down these will feel soft and small. In this there is no strangulation. We may know varicocele from its being on the left side, not one case in 10. ~~(100)~~ being on the right side. In hernia the tu-

mour is generally on the right side.

We may have encysted tumours in the epididymis, which may be mistaken for hernia. These feel small in the beginning like a shot or pea and then increase in size sometimes to that of a pullets egg.

When high on the chord, we may have encysted tumours of the chord mistaken for hernia. When we have tumours formed in the chord, or in the abdomen and they protrude, and they produce a kind of irritation like hernia, we are very apt to be mistaken. It is proper then to make an operation to explore the part.

Teissdous and other diseases of the testicle, and hydrocele could hardly be mistaken by you for hernia.

Umbilical Hernia. In all cases of umbilical hernia, we have a hernial sac. I have never seen a case without it.

In the operation we cut no important blood vessels or nerves. The epigastric artery runs in the sheath of the rectus muscle and is out of reach. If this we are not to cut the sac or to irritate it by handling. We are to put the finger in the ring, introduce a blunt bistoury, and cut upwards.

Congenital Umbilical Hernia is important to be understood

In all cases in which you see the cord enlarged at the umbilicus, you must suspect a bowel has protruded, and (cannot) tie the cord several inches from the umbilicus.

Sometimes it happens that the walls of the abdomen are not formed. You see through the transparent walls of the abdomen the bowels moving about. Such children never live long; they always die. The growth in these cases of the child is not perfect. This is seen sometimes in the chicken which comes through the shell before it is formed, and runs about with the yolk hanging to it. These chickens always die. There are only mammoth umbilical hernia.

In adults the hernia is never truly umbilical. It's truly a hernia of the linea alba, the bowel coming through an opening in this, and not through the umbilical opening. In the hernia of the linea alba, the opening is an oblong hole; in the umbilical hernia it is a round hole. In adults the hernia is almost always incarcerated. From the the fatty and thickened state of this, in adults the bowels cannot protrude, whereas in infancy, it being soft, light and easily torn, the bowels protrude (through it), making it an intestinal hernia.

There is a fatty hernia (hernia) sometimes met with

in these parts, which is not omental. It is not in the cavity of the abdomen, but exterior to the peritoneum and adhering to it. Getting between the fibres of the muscles, the fat escapes, dragging with it the peritoneum (forward). It keeps up a chronic and flatulent state of the bowels, sometimes constipation and dyspepsia, which by relieving this hernia will subside.

We make a bag to fit over the tumor which is fastened around the abdomen. We put in fold after fold to lessen the size of the bag and cause the fat to be absorbed. When we have got it down we then put on a compress and bandage. This is frequently met with in persons who have been fat and then become thin.

Lecture 54th January 30th 1843.

After the operation for strangulated hernia, if the bowel sloughs after being returned to the abdomen, in by far the majority of cases, it will pass downwards through the intestines, surrounding adhesions making up the canal. Upon returning the bowel if it be livid and dark, we cover the part with a poultice until all danger is over. If it slough and discharge externally, we have formed what is called an Artificial Anus. If the opening be small, it will cure itself,

or a cure may be effected by the application of adhesive strips and a bandage.

If the opening be large, a plug has been used to press the bowel in among the granulations, where a union takes place and then the external wound healed.

There is no difficulty in effecting a cure when only a small portion of the bowel has given way, making in it an opening. But sometimes we have it like the ~~two~~ ends of a double gun barrel given 2 or 3 inches of the whole circumference of the intestine having given way. We then have the feces coming out at the upper opening and discharging externally. In this case the partition between the upper and lower portions has been cut and a cure effected. When this partition is thickened it cannot be done in this way, the partition being sometimes ½ inch in thickness. When this is thickened Dr Physick run a seton into this thickened portion, about ⅔ of an inch, which caused ulceration and absorption of it. When this was done the external wound was closed and the feces passed on. Dupuytren pressed this partition with a forceps, which caused it to slough. Neither of these plans are as good as that of removing it, as the patient is always afterwards troubled with cholic or ileus.

introduce a plug into the true opening of the intestine and distend them; then cut out a notch in the partition sufficient to make a free communication between the upper and lower portions. This may be made semi-lunar if you please, only do not merely make an incision, which will unite. In 8 or 10 hours inflamation will supervene, and by adhesion secure the cavity of the abdomen.

Dropsical effusions into the cavity of the Abdomen— Paracentises We have of these effusions 2 kinds; General dropsy — called Ascites, and encysted dropsy.

The General dropsy is marked by this peculiarity — the peritoneum is pushed forwards and the convolutions of the intestines backwards. This leaves a free and open space which is occupied by the fluid. The abdomen is distended by this, and there is distinct fluctuation.

The only cases in which there is danger from the operation, are those of pregnancy or enlarged uterus with an effusion, and those of drunkards, and persons from malarious districts with enlarged livers. If the patient be a woman you should always examine the condition of the uterus, and if a drunkard or person from a malarious district you should always examine the condition of the

liver, its situation and course. If you place pillows under the shoulder and pelvis, so as to relax the muscles of the abdomen, the course of the liver can always be traced out.

By operating below the umbilicus, we have a space where we can always avoid these. If the uterus be enlarged and rise in the abdomen, we operate as high as the umbilicus; if the liver be enlarged and extend down, we operate below. For the operation I am always content with a small trocar. This has two advantages. 1st. It does not contuse the parts. 2nd It discharges the water slowly and allows the abdomen to contract slowly.

We must always make first, an incision through the integument, and then introduce the trocar. By this the wound will always close by the adhesive inflamation or 1st intention.

If the trocar be large and the water drawn off quickly the patient is apt to faint, or be thrown into spasms, or be alarmingly prostrated, and sometimes irrecoverably (~~prostrated~~). By being small the water is drawn off slowly, and the muscles are allowed (~~time~~) to contract gradually, by which ~~they~~ are not thrown into rugae or folds. After it has been withdrawn we apply a broad bandage around the abdomen to keep up the stimulus of tension.

There are cases of effusion which sometimes give us trouble. The foramen of Winslow, under the capsule of Glisson, may be closed by adhesive inflammation, which will separate the upper part from the general cavity of the peritoneum. From inflammation in this upper part, we may have an effusion - and sometimes we have a collection of purulent matter - separate from the general cavity. It lies behind the stomach and colon, and divides the lamina of the mesocolon. We never have in this collection, distinct fluctuation. When felt it is generally above the umbilicus, which is the best place to make the puncture for evacuating it.

Ovarian Dropsy. In encysted dropsy of the ovaria we have not so much difficulty in distinguishing it. We have also fleshy enlargements and fungous tumours of these bodies.

This begins in 1 of the iliac regions, from which it rises upwards, finally distending the whole abdomen. In the last stage, when the whole abdomen is distended, we may have some difficulty in distinguishing it from ascites. But if we ask, we will find that it commenced in one of the iliac regions and rose from that upwards. And if we examine the uterus through the vagina, and find it pressed down

or to one side, then there can be no doubt about it being ovarian disease.

If we have fluctuation in this disease, the use of iodine and other remedies to promote absorption is absurd. The only remedies, given internally which are of any service are those which correct the general health.

If the tumour be of large size, rising in the cavity of the abdomen, and oppressing the functions of the viscera it is a question, if an operation can be performed to relieve this state. If it fluctuate, very great relief can be afforded by tapping, which letting out the contents, and removes the pressure.

We puncture 2 or 3 inches below the umbilicus through the linea alba. At this point we can tap the cyst which extends over.

Sometimes we feel only fluctuating points over the abdomen. When this is felt we then conclude only cysts exists which are distended with fluid.

If fluctuation be found at any part we may tap there. There is only a slight danger of cutting the epigastric artery or some of its branches. Many cases are given of internal hemorrhage following wounds of this artery,

but I think the danger is very slight.

Where we have a combination of diseases in the ovaria, as a fleshy tumour or sarcocele and hydatids, we perhaps feel a fluctuation, which, if punctured, may leave out a pint of fluid only, after which other points of fluctuation are felt. It is then a question, whether or not we operate on the others. I have operated leaving the fluid of one cyst out, and have perceived fluctuation in other places before I have withdrawn the trocar. I have kept the instrument in the first orifice and turned it through the septum in this case into the next cyst. I have in this way operated evacuating 2, at other times 3, and in one case 5 cysts without withdrawing the instrument. It is singular that these cysts all contain different kinds of fluid. In the same patients, I have left out in one a dark brown fluid; in another a yellowish fluid, in another, a bloody fluid, and in another a fluid like bile. I have been much alarmed upon seeing this fluid like bile, thinking I had wounded some of the viscera; but we now know that blood, lying long in a part will become like bile. These cysts almost invariably contain different fluids. By the operation we remove the tumour and

torpor of the ~~[illegible]~~, and by this we may enable the patient to get along comfortably for a number of months. I have one patient, whom I tap every 6 months or a year, while she is always relieved. I have tapped her in this way for the last 12 years, and although she now labours under a cancer of the breast, she still enjoys a tolerable degree of comfort. I have had a number of patients, whom I have tapped every 3 or 4 months.

Sometimes, in performing the horrible and bloody operation of extirpation we will be justified. It is a extremely dangerous and horrible operation, but it has been performed, though we have not the average number of deaths.

In large and fleshy tumours of the ovaries we are not justified in operating. In these cases we are not certain that it's a tumour of the ovaries, and when they are, in by far the majority of cases they are of a malignant nature, and from them large sums we may expect a return.

Only where a large cyst exists can we operate. This may be punctured and the contents evacuated. Then the puncture may be enlarged, and the cyst, which protrudes through the opening may be dragged out with a forceps. This operation is not dangerous, and may be performed by any

2